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ABSTRACT

Historical events have set the stage for the current U.S. agricultural export performance. Agricultural exports in the early 1990s were as large or larger relative to the size of the agricultural sector than at any time since. A dramatic decrease in net farm income was caused by the Great Depression (1929-1932). Following passage of the Hawley-Smoot Tariff Act and the wave of protectionism it set off around the world, U.S. agricultural exports remained small until the early 1970s, when devaluation of the U.S. dollar and a surge in world demand for agricultural commodities returned agricultural exports to their predepression level. U.S. agriculture is now inextricably linked to world markets. Five issues and developing trends in world agricultural markets have the potential to shift current world patterns of agricultural trade: (1) the current round of multilateral trade negotiations; (2) higher value product trade trends; (3) the scheduled 1992 economic integration of the European Community; (4) foreign development assistance; and (5) the United States-Canada Free Trade Area Agreement. Maintaining and enhancing U.S. competitiveness in world markets is tied to continued efforts to liberalize world trade and adequate allocation of funds to research in the production, processing, and marketing of food and agricultural commodities. (18 figures; 17 references) (YLB)

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INTERNATIONAL AGRICULTURAL TRADE AND POLICY: ISSUES AND IMPLICATIONS FOR U.S. AGRICULTURE*

GARY W. WILLIAMS**

TAMRDC Special Series Report No. SS-2-89

September 1989

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TEXAS AGRICULTURAL MARKET RESEARCH CENTER REPORT

Department of Agricultural Economics
Texas Agricultural Experiment Station
Texas Agricultural Extension Service
Texas A&M University
College Station, Texas

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*Presented at the International Retreat of the Department of Agricultural Economics, Texas A&M University, Walden on Lake Conroe, Texas, September 28, 1989.

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INTERNATIONAL AGRICULTURAL TRADE AND POLICY: ISSUES AND IMPLICATIONS FOR U.S. AGRICULTURE

Paper presented at the International Retreat of the Department of Agricultural Economics, Texas A&M University, Walden on Lake Conroe, Texas, September 28, 1989. Texas Agricultural Market Research and Development Center (TAMRDC) Special Series Report No. SS-2-89 by Gary W. Williams, Professor of Agricultural Economics and TAMRDC Coordinator, Texas A&M University.

ABSTRACT: U.S. agriculture is now inextricably linked to world markets. This paper explains the historical underpinnings and the major current issues affecting that linkage. Maintaining and enhancing U.S. competitiveness in world markets is tied to such things as continued efforts to liberalize world trade and adequate allocation of funds to research in the production, processing, and marketing of food and agricultural commodities.

The **Texas Agricultural Market Research and Development Center (TAMRDC)** *celebrated its 20th anniversary of providing timely and unique research on issues affecting agricultural markets and commodities important to Texas and the nation this year.* **TAMRDC** *is a market research service of the Texas Agricultural Experiment Station and the Texas Agricultural Extension Service. The main objective of TAMRDC is to conduct research leading to more efficient marketing of Texas and U.S. agricultural products in domestic and international markets. Research areas include domestic and foreign market opportunities for Texas and U.S. produced agricultural products; marketing policies and strategies; competitiveness of Texas and the U.S. in the production and marketing of traditional bulk and high value/value-added products in a global setting; the impact of new technologies on markets and prices; efficiency of market information systems; market structure and performance; consumer attitudes and preferences.*

INTERNATIONAL AGRICULTURAL TRADE AND POLICY: ISSUES AND IMPLICATIONS FOR U.S. AGRICULTURE

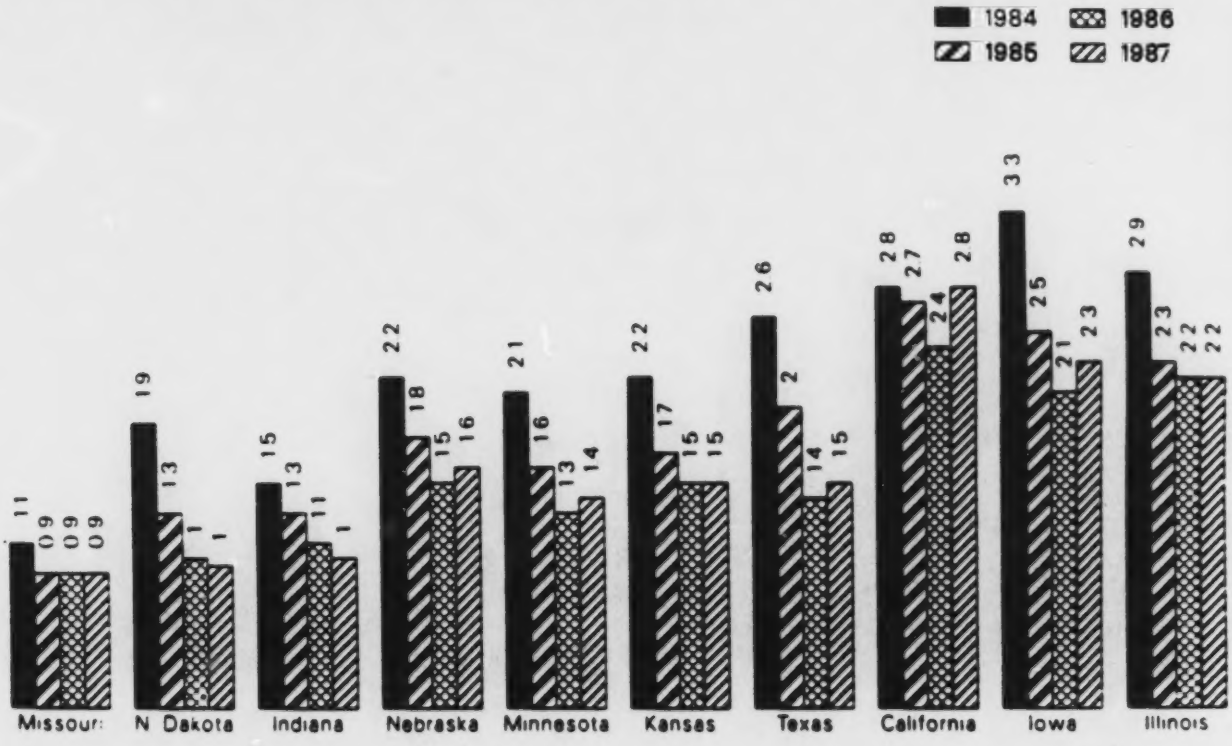
Gary W. Williams

The story of the phenomenal growth of world agricultural markets since the mid-1970s and the implications for U.S. agriculture have been hashed and rehashed, packaged and repackaged, and examined from just about every angle and point of view imaginable. Virtually hundreds of seminars, workshops, conferences, and symposia have featured thousands of presentations and debates by researchers, policymakers, agribusiness executives, foreign representatives, and others on an impressively wide array of issues concerning this phenomenon. Few issues have captured the attention of so many in the agricultural industry over the last 15 years. Consequently, there should be few here who are not familiar with at least the main thrusts of the on-going discussions on international agricultural markets and their relationship to U.S. agriculture.

A recent external review, however, identified international work as this department's "under-resourced link". My experience in serving on the College of Agriculture and Life Sciences International Mission Review Task Force suggests that this may well be the case across the entire College. This is particularly surprising and disappointing because Texas has grown to become the leader in agricultural exporting in the southern region and the fourth largest agricultural exporting state in the country (figure 1). Consequently, the objective of this paper is to provide a broad overview of the historical underpinnings and salient issues in international agriculture trade and policy as background to further discussion on the appropriate role of international programs in the Department of Agricultural Economics and the Agriculture Complex of the Texas A&M University System. First, the paper summarizes the historical events that set the stage for the current U.S. agricultural export performance. Then competitiveness in world agricultural trade is explored with emphasis on the origins and determinants of competitive strength in world markets. After highlighting a number of the salient issues in international agricultural trade and policy, some implications for both agricultural programs and policy are drawn.

Figure 1

Value of U.S. Agricultural Exports by Selected States in Billions of Dollars, Fiscal Years 1983-84 through 1986-87.



Source U S Department of Agriculture, Economic Research Service, *Foreign Agricultural Trade of the United States*, March-April 1988; various other issues, and personal communications with officials of U S Department of Agriculture, Economic Research Service.

THE RE-INTERNATIONALIZATION OF U.S. AGRICULTURE

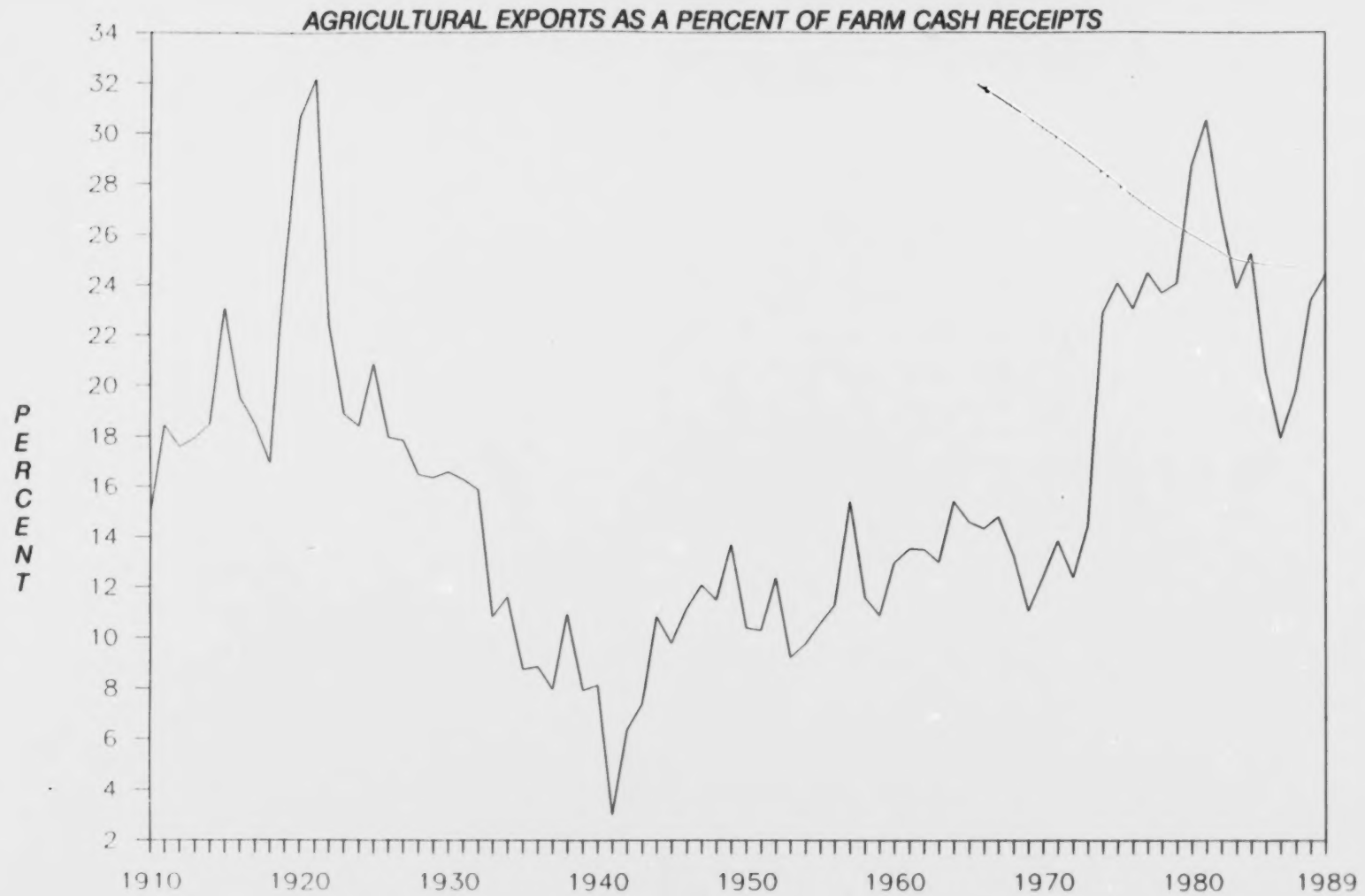
Although the recent export performance of U.S. agriculture is well-known, perhaps less well-known is that agricultural exports were as large or larger in the early 1900s relative to the size of the agricultural sector than at any time since (figure 2). The stock market collapse of 1929, however, ushered in the Great Depression, sending farm product prices down by over 50% between 1929 and 1932 and dropping net farm income for most farmers to zero or below. Incredibly, as the depression set in, President Hoover recommended that Congress enact an increase in import tariffs as a means to support and protect the agricultural sector. In response, Congress passed the Hawley-Smoot Tariff Act of 1930 raising tariffs to an all time high. Willard Cochrane, a prominent agricultural economist, historian, and policy analyst, muses that "it is difficult to see why Congress would take such an action, since it was well known at the time that one of the principal causes of the agricultural depression...was the loss of export markets following World War I". This action by the U.S. set off a wave of protectionism around the world and strangled world trade in general and the export of U.S. farm products in particular. Agricultural exports dropped to little more than 2% of farm cash receipts by the early 1940s (figure 2).

World War II brought a resurgence of world agricultural trade. Even so, the U.S. was still a net importer of agricultural products by the 1950s and only a marginal net exporter in the 1960s. By 1970, agricultural exports still accounted for only 14% of U.S. farm cash receipts. Then, in the early 1970s, a number of events combined to return agricultural exports to their pre-depression level of contribution to the profitability and vitality of U.S. agriculture. Pre-eminent among those events were the devaluation of the U.S. dollar and an unexpected, unprecedented surge in world demand for agricultural commodities.

The Move From Fixed to Flexible Exchange Rates

In 1944, the finance ministers of 44 non-communists countries met in the small community of Bretton Woods, New Hampshire and did something that is quite rare in international negotiations.

Figure 2


AGRICULTURAL EXPORTS AS A PERCENT OF FARM CASH RECEIPTS
PERCENT
34
32
30
28
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18
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12
10
8
6
4
2
1910
1920
1930
1940
1950
1960
1970
1980
1989

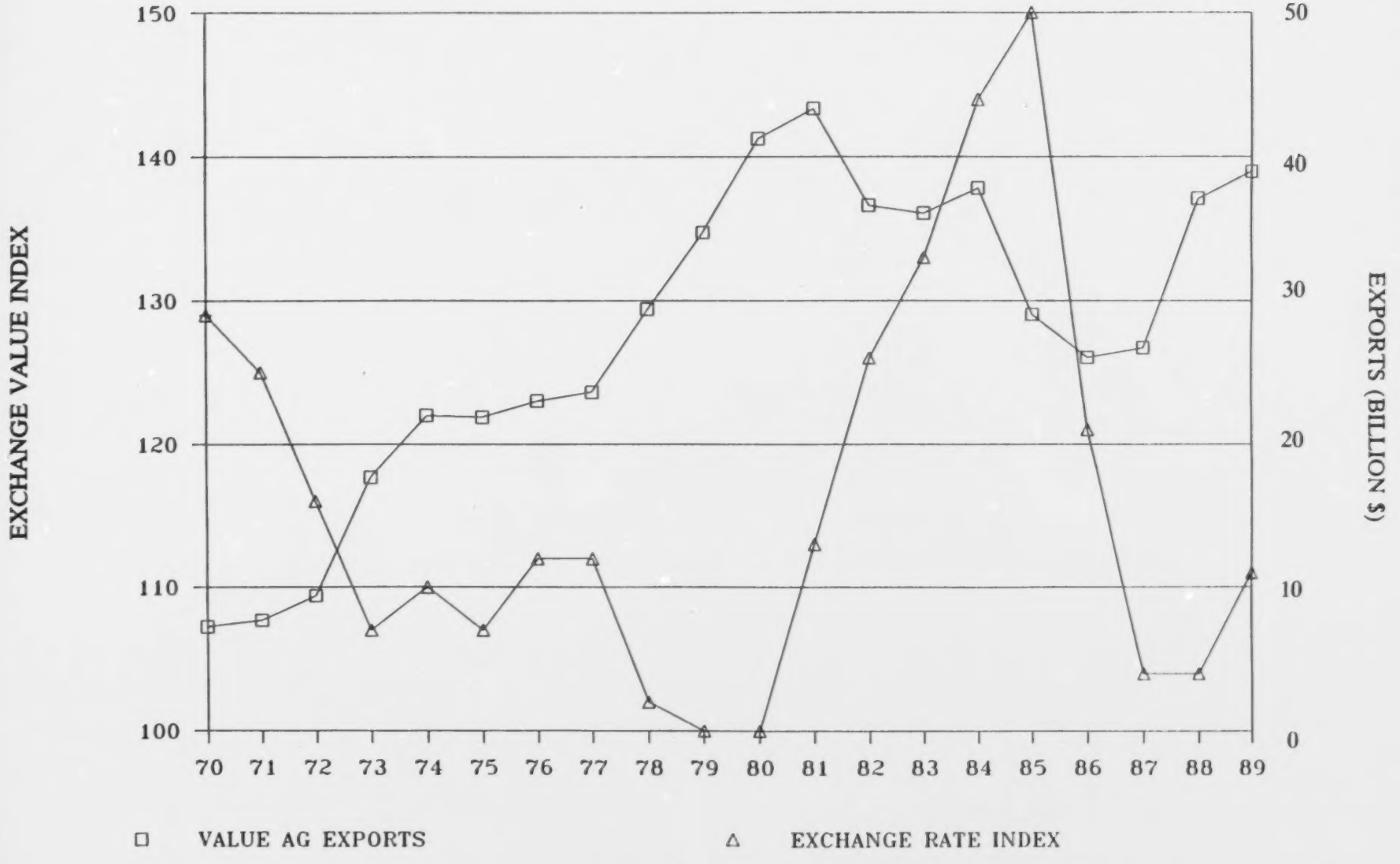
They agreed on something. What they agreed on was a system of fixed currency exchange rates. The motivation for such a system was the rather general belief that the beggar-thy-neighbor competitive currency devaluations of the 1930s had greatly exacerbated the Great Depression and helped spread it on an international scale. They believed that a system of fixed rates would force countries to deal with their own internal economic imbalances through changes in domestic policy rather than through exchange rate manipulation in an attempt to force adjustment to take place in other countries.

The Bretton Woods system broke down in the 1970s, however, under severe pressure of increasingly large U.S. balance of payments deficits and a correspondingly large and growing surplus of U.S. dollars held by foreigners which put strong downward pressure on the dollar against most currencies. President Nixon essentially closed the "gold window" in 1971 and imposed a temporary 10% tariff on most imported goods until foreign central banks agreed to realign their currencies against the dollar. A major devaluation of the dollar occurred soon thereafter. The 1971 devaluation, however, did not have the expected effect on the U.S. balance of payments deficit because of speculation against the dollar which magnified the deficit. This forced a second round of revaluations against the dollar in 1973, effectively shifting the world to a system of floating exchange rates.

At least one prominent agricultural economist has made quite a name for himself by using a graph like figure 3 to point out that U.S. agricultural exports took off in the 1970s at just about the time that the dollar was devalued. International finance theory, of course, teaches that the increasingly overvalued dollar of the 1960s under the Bretton Woods system should have had the same effect on U.S. agricultural exports as an across-the-board export tax. Thus, the argument that the dollar devaluations of the 1970s, which effectively eliminated the implicit tax on U.S. exports, precipitated the subsequent surge in U.S. agricultural exports is quite plausible indeed. Although a relationship between the devaluation and the turn-around in U.S. agricultural exports has now become part of accepted conventional wisdom in international agricultural trade circles, a debate has raged over the contribution of the devaluation to the rapid improvement in U.S. export performance in the 1970s relative to that of the sudden and sustained shift in world agricultural commodity demand which also took place during that period.

Figure 3

EXCHANGE VALUE OF THE DOLLAR VERSUS
U.S. AGRICULTURAL EXPORTS



An Unprecedented Growth in World Demand

While the countries of the world struggled with increasingly volatile currency values and needed adjustments in macroeconomic policies in the mid 1970s, per capita incomes in a number of developing countries and Eastern Europe were experiencing a rapid and fundamental growth. At the same time, shifts in Soviet and Chinese agricultural policies put greater emphasis on imports to meet domestic food and feed requirements. The economic growth in some major importing countries such as Taiwan and South Korea was so spectacular that they are now dubbed "Newly Industrialized" countries rather than "Developing" or "Middle Income" countries as in the past.

Still another event added to the upward pressure on world demand. In the mid-70s, the OPEC-induced run-up in the world petroleum price transferred a substantial amount of liquidity from developed oil-importing countries to developing oil exporting countries. The result was not only an increase in food demand in the suddenly rich OPEC countries, but also a worldwide expansion in liquidity and lending, particularly through the Eurodollar and Eurocurrency markets. The increased availability of loanable funds and declining and even negative real world rates of interest spurred a rapid growth in agricultural product demand by many developing countries based on an equally rapid growth in external debt.

The Unexpected Downturn of the 1980s

The trade optimism of the 1970s turned researchers and policymakers from concerns about surplus productive capacity in agriculture and secular declines in farm prices to concerns about the ability of the world to feed itself and the consequent price and cost inflation consequences. Most observers became convinced that the seventies were merely a transition period as global agriculture adjusted to a new order of tight supplies, increasing prices, and increasing incidence of starvation and hunger around the world (Rahe and Christensen). This conventional wisdom was supported by nearly every major world agricultural forecast during that period (see, for example, FAO; USDA; Blakeslee, et.al.; University of California Task Force; IFPRI; and the Global 2000 Report).

As seems to be the case for most forecasts, however, these projections were too strongly influenced by the recent past and the prevailing conventional wisdom. An unexpected global

recession in the early 1980s significantly slowed the growth in world food demand. At the same time, the potential effects of a number of developing underlying trends were either not understood or underestimated, including the growing investments in productive capacity and agricultural technology in major importing countries, the growing debt burden of many developing countries, and an upward movement in the value of the dollar.

Growth in Global Productive Capacity

The events of the early to mid-1970s that propelled the U.S. agricultural sector back into the global market, pushed commodity prices to record levels and sent strong signals to governments and farmers around the world to invest heavily in agricultural productive capacity. Such investments in developed countries occurred as the cost of farm price and income support declined. Many developing countries not only expanded their area in production but also diverted both domestic and international resources into the development of rural infrastructure and the adoption and creation of yield-enhancing technologies. The resulting expansion in world food production met a more slowly growing world market in the 1980s with the obvious consequences of declining world commodity prices and a tightening U.S. agricultural balance of trade.

The Growing Debt Burden of Developing Countries

Many became suddenly aware of what had been happening in world financial markets a few years ago when headlines about the international debt and liquidity crisis began appearing in the nation's periodicals. Reports of burgeoning external debt loads and escalating debt service ratios of many developing countries, particularly higher income developing countries, illustrated both how integrated international capital markets had become and how closely tied U.S. financial markets had become to international markets (table 1). This drain on world financial resources might not have had much effect on the world economy except that the world supply of liquidity was quickly tightening. Normally, loans at any level generate a multiplier effect which stimulates the economy. If the funds are not repaid, however, the stimulating effect is greatly reduced. And unfortunately, the most indebted countries were not repaying their loans.

How would your banker react if you walked into your bank today and told him that you

Table 1

OUTSTANDING TOTAL EXTERNAL DEBT OF SELECTED NATIONS*

	Total External Debt (Billions $ US)	
	1983	1986
Brazil	$96.2	$97.2
Mexico	92.7	91.1
Argentina	43.5	43.0
South Korea	35.0	34.3
Venezuela	31.4	32.4
Philippines	28.0	21.6
Poland	26.3	35.2
Indonesia	21.9	35.7
Israel	14.6	20.4
Nigeria	10.0	21.9

*Includes public, publicly guaranteed and private non-guaranteed debt.

would rather not repay the 30-year mortgage on your home just now, but preferred paying only the interest for a few years after which you would expect the bank to reduce interest rates and to extend the payback period before considering a return to payments on the principal? And if he did not agree, you would simply default on the loan? He would probably laugh you out of his office. How would he react, however, if you owed the bank $96 billion when you made this demand? He would likely sit up and listen. And that is just what happened when Brazil, Mexico, Argentina, and others made such demands in the early 1980s. The consequences were tightening available funds, higher interest rates, and extremely limited ability of many of these countries to do anything with their scare foreign exchange except pay interest on debt. This meant both severe economic downturns in these countries and both reduced consumer purchasing power and reduced foreign exchange availability for food imports.

The Skyrocketing Dollar

By the late 1970s, the exchange value of the dollar had dropped to a low of about 35 percentage points below the pre-devaluation level and remained there looking for some direction from about 1978 until early 1981. The OPEC-induced petroleum price increase during in that period was pulling huge quantities of dollars out of American hands into international currency markets and helping keep the dollar weak. At the same time price inflation was out of control in the U.S., putting further downward pressure on the dollar. In the early 1980s, however, both conditions changed. The U.S. oil industry deregulation removed the implicit oil import subsidy while at the same time world oil prices were declining. Inflation dropped from double digits to the 5% range. The stage was set for a major resurgence in the value of the dollar.

A related and significant event was taking shape. As price inflation dropped, nominal interest rates skyrocketed, pushing real rates of interest to all time highs in this country. The consequence was rapidly escalating inflows of foreign capital. As the real rates of interest boosted the relative attractiveness of the U.S. for investment of foreign capital, an increasing number of foreign investors converted their currencies to U.S. dollars for investment in U.S. assets and financial instruments. The result, of course, was a more rapid increase in the value of dollar then the decline in the early 1970s to higher levels than had prevailed before the devaluation.

Where did the high real rates of interest come from? The escalating external debt of many foreign countries likely had some effect. But the main culprit was U.S. fiscal and monetary policy. On the fiscal side, U.S. deficits were growing. And although deficit spending by the U.S. government is not new, at least two things were different. The first was the sheer magnitude of the debt increase. The increase in the net debt of the U.S. government during the eight years of the Reagan administration was nearly 3 times greater than the total increase since 1945 until Reagan took office (table 2).

More important, however, was a significant shift in U.S. monetary policy. During the 1960s and early 1970s, the Federal Reserve Bank (FRB) was monetizing the deficit, i.e., essentially printing money to pay federal government obligations. The result was an increasing rate of price inflation. The FRB policy was to set a target interest rate and alter the money supply growth rate to keep interest rates at about the target level. In the late 1970s, however, in an effort to get price inflation under control, the FRB stopped monetizing the deficit and set the money supply growth rate as the target, allowing interest rates to seek equilibrium levels. This action forced the federal government to go to financial markets to borrow funds to cover its escalating deficit. The drain on loanable funds was severe and financial markets responded with higher and higher rates of real interest.

Given the worldwide recession, foreign exchange constraints, and liquidity problems in many importing countries, many agricultural economists expected the drop in world food demand and, therefore, U.S. agricultural exports, to help put a lid on the increase in the value of the dollar. Most of those analysts, however, were largely unaware of what was happening to the U.S. capital account in the U.S. balance of payments. The high levels of real interest and growing inflows of foreign capital were driving up the value of the dollar, discouraging U.S. exports and encouraging U.S. imports. In other words, the severe declines in the U.S. balance of trade developed largely as a simple reflection of the rapid growth in the U.S. capital account.

This all was occurring precisely when the U.S. agricultural sector was becoming increasingly export-oriented. Unfortunately, it is the export-oriented sectors of an economy that bear the burden of the adjustment to changes in currency values. The quick turnaround in U.S. exports and prices sent shock waves through the U.S. agricultural economy, fueling the increasing volatility of prices and markets.

Table 2

NET DEBT OF THE U.S. FEDERAL GOVERNMENT*

End of the Fiscal Year	Net Debt (Billions of $S)	Percent Change
1945 TRUMAN	235.2	
1952 EISENHOWER	214.8	-8.9
1960 KENNEDY/JOHNSON	236.8	10.2
1968 NIXON/FORD	289.5	22.2
1976 CARTER	495.5**	71.2
1980 REAGAN	709.3	43.1
1988 BUSH	2,050.2	189.0
1990***	2,285.0	11.5

* Gross debt of the Federal Government less that owned by trust funds of the federal government.

** Includes fiscal-year transition quarter of 1976.

*** Forecased data.

The Attempt to Recapture World Markets: The 1985 Farm Bill

Although many of the trends in exchange rates, interest rates, exports, and prices were already underway in 1980, they were largely ignored in the debate in Congress on the 1981 Farm Bill. Based on the rather optimistic price and trade forecasts available, Congress passed a new farm bill which instituted relatively rapid automatic target price increases and rigid fixed loan rates. With disappearing markets and declining prices, U.S. farmers found it more profitable to forfeit their output to the Commodity Credit Corporation under this new farm bill than to export at the lower world market prices. Growing stocks led to containment efforts by the U.S. government including increasing acreage reduction programs and the 1982 payment-in-kind program. In effect, the U.S. was withdrawing from world markets and supporting world prices at higher levels than they otherwise would have been.

Soon after the signing of the 1981 Farm Bill, policymakers and the entire agribusiness community began to realize that some assumptions behind the legislation were out of step with what was actually happening in world agricultural markets. After several years of various attempts at redressing the problem, Congress passed the Agricultural Programs Adjustment Act of 1984 which prevented further automatic increases in the target price until a new farm bill could be fashioned.

The debate on the 1985 Farm Bill was long and heated. The legislation that emerged had tremendous implications for U.S. agricultural exports and world trade. Dr. Robert L. Thompson, who as Assistant Secretary of Agriculture for Economics became the administration spokesman in the debate and now Dean of Agriculture at Purdue University, has argued that the single most important point of contention in that debate was the magnitude of the agricultural export demand elasticity, i.e., the responsiveness of agricultural exports to price changes. If the elasticity is large (i.e., greater than one in absolute value) then a policy of price support reduction would lead to a significant increase in both the volume and value of agricultural exports and lead to increasing net farm income. On the other hand, a low export demand elasticity suggests that an increase in price supports through mandatory acreage reduction or other means would be the appropriate policy choice. This is because higher, rather than, lower prices would lead to increased export value and increasing net farm income in this case. The fact that exports would diminish further under this scenario would be unimportant.

A debate over the size of the export demand elasticity raged and continues to rage. The Administration, however, was successful in persuading Congress to let loan rates fall towards world market levels although they were less willing to allow a decline of the same magnitude in target prices. At the same time, the framers of the 1985 Farm Bill put in place numerous other instruments to stimulate exports through both price subsidies and non-price means. The Export Enhancement Program and marketing loans for rice and cotton, for example, are essentially export subsidy programs in that they reduce the cost of U.S. commodities to foreign buyers. The Targeted Export Assistance Program, on the other hand, is an effort to develop foreign markets for U.S. produced agricultural commodities and, thereby, shift out the U.S. export demand curve.

Much of the sentiment that supported export incentive measures was a reaction to the fact that not only were U.S. agricultural exports declining but also the U.S. share of world exports (table 3). In supporting the world price of many agricultural products from 1981 to 1985, the U.S. became the residual supplier in world markets, absorbing all the downside risk. Our export competitors, and particularly the European Community, found it profitable to become more aggressive in export marketing, export pricing, and export subsidization. The hope was that even if the new export policies in the 1985 Farm Bill did not by themselves recapture world markets, they would make it extremely costly for U.S. export competitors to continue subsidizing exports and force them to the bargaining table.

U.S. Agricultural Export Performance Since the 1985 Farm Bill

Have the export enhancing provisions of the 1985 Farm Bill worked? What has been the performance of agricultural exports since 1985 and what role has the Farm Bill played? These are two of the key questions to be debated in the upcoming debate on the new farm bill when the current one expires next year. In the year or so immediately following the implementation of the 1985 Farm Bill, the data on exports fueled the nay-saying of the Farm Bill pessimists. Total agricultural export volume and value dropped 13% and 16%, respectively, from FY 1985 to FY 1986 (figures 4 and 5). As a percent of farm cash receipts, exports dropped to their lowest level since 1974 (see figure 2). Although there were a few bright spots, including soybean and product exports, exports of most commodities, and program crops in particular, were down. The following year (FY 1987) brought

Table 3

GRAIN TRADE AND U.S. SHARE

CROP YEAR	TOTAL	U.S.	OTHER	U.S. SHARE
	MILLION METRIC TONS			%
1970	109.6	40.3	69.3	36.8
1971	110.0	42.3	67.7	38.5
1972	134.7	70.8	63.9	52.6
1973	141.7	75.4	66.3	53.2
1974	136.6	65.8	70.8	48.2
1975	150.3	83.7	66.6	55.7
1976	157.8	78.6	79.2	49.8
1977	171.3	89.2	82.1	52.1
1978	177.1	95.1	82.0	53.7
1979	198.2	111.1	87.1	56.1
1980	215.6	114.9	100.7	53.3
1981	210.9	110.9	100.0	52.6
1982	200.6	96.3	104.3	48.0
1983	207.8	97.8	110.0	47.1
1984	218.8	97.4	121.4	44.5
1985	180.8	63.4	117.4	35.1
1986	187.6	76.3	111.3	40.7
1987	200.4	98.3	102.1	49.1
1988	207.8	104.5	103.3	50.3

Figure 4

VOLUME OF U.S. AG EXPORTS BY COMMODITY

FISCAL YEARS 1972–88

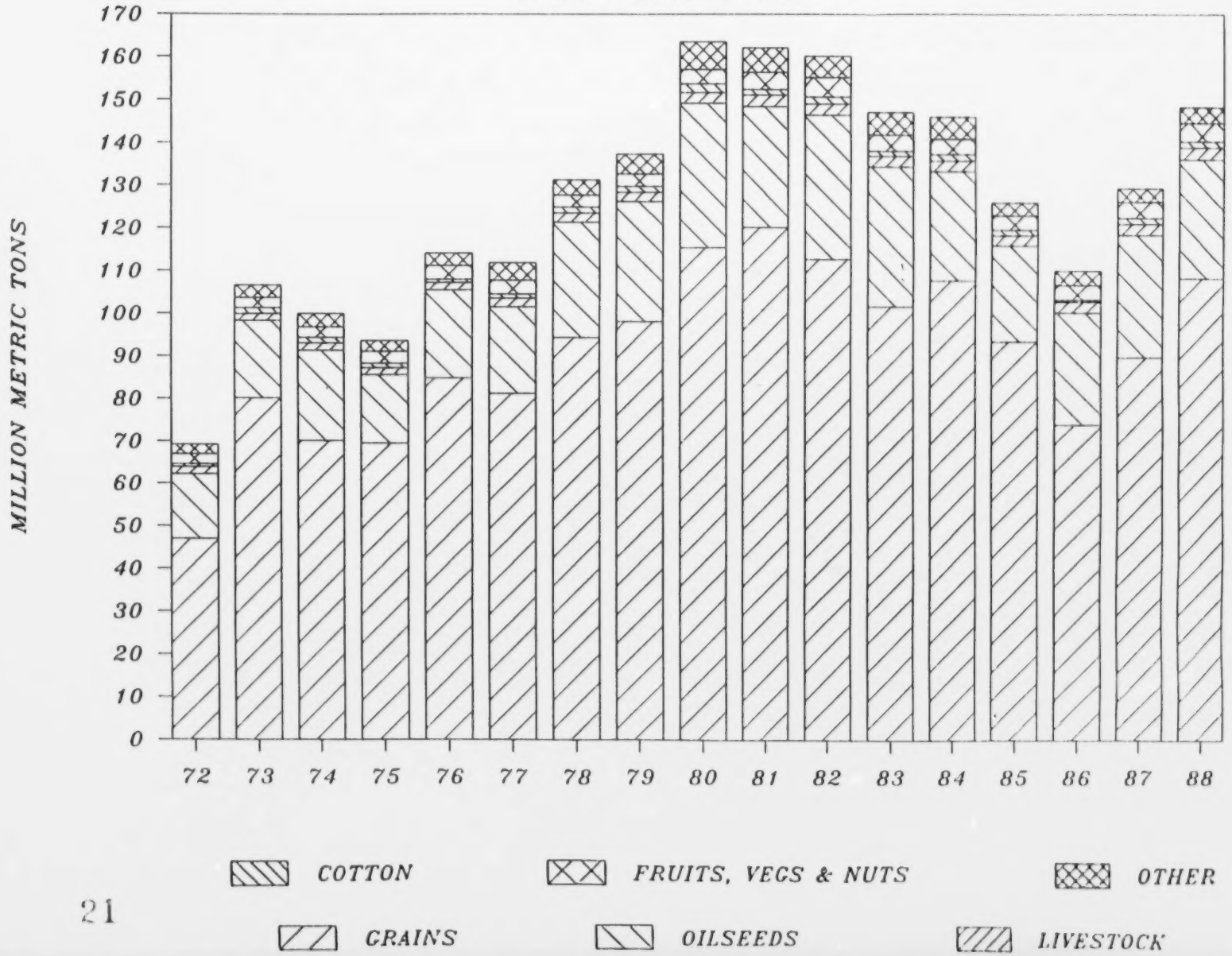
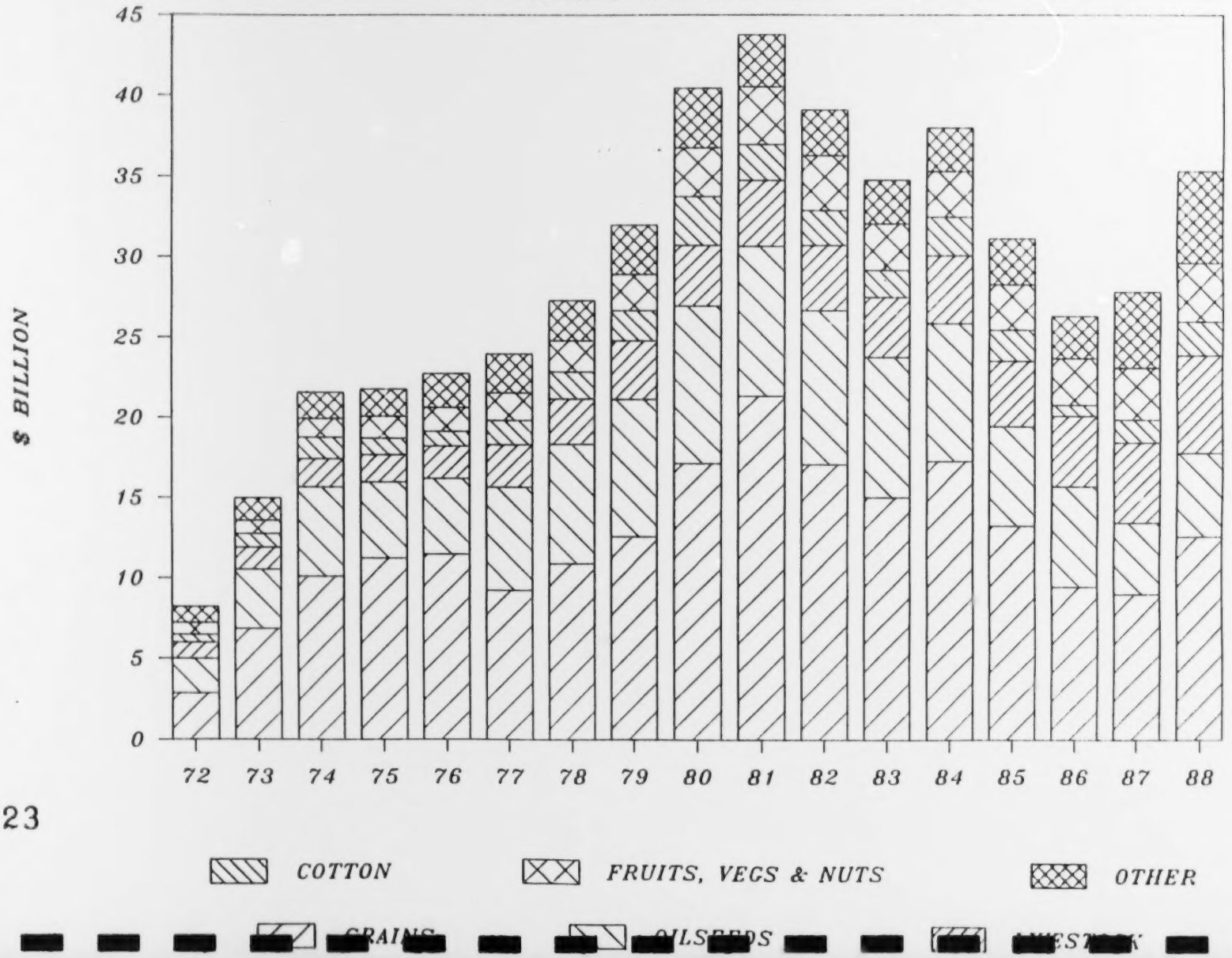


Figure 5

VALUE OF U.S. AG EXPORTS BY COMMODITY

FISCAL YEARS 1972–88



renewed optimism because total grain and cotton export volumes recovered to pre-1985 levels. The pessimists, however, quickly pointed out that although export volumes had increased, the value of those exports had increased little if any and were still well below the 1985 levels.

In FY 1988 and 1989 (i.e., crop years 1987 and 1988), however, the story changed somewhat. Not only did grain and cotton exports increase to pre-1985 levels, but the value of those exports jumped considerably. A perusal of figures 6 through 11 (which give the data in crop years) suggests that this was the case for most of the program crops. For wheat and tobacco, export values have increased significantly this past crop year (1988), despite drops in their volumes. For rice, export value has increased in both of the last two years even though there was only a slight recovery in rice exports last year. In corn and cotton, export value increases have nearly caught up with increases in export volumes. Despite a slight drop in wheat export volume over the past crop year, export value has increased dramatically.

Is the 1985 Farm Bill responsible for these increases? Would the declines experienced in FY 1986 and 1987 have been even worse without the 1985 Farm Bill? The U.S. share of world grain trade has increased steadily from a low of 35% in 1985 to 50% last year, only 6 percentage points under the 1979 peak (table 3). Does this mean that the U.S. has regained its international competitiveness in world agricultural markets? The difficulty in answering these questions, of course, is that following implementation of the 1985 Farm Bill, the dynamic forces influencing world markets did not remain in a ceteris paribus ("all else held constant") condition. The exchange value of the dollar, for example, dropped 46 percentage points from its peak in FY 1985 to the low levels of the previous decade by FY 1987 (see figure 3). The dollar declined by more in those two years than during the previous ten year depreciation of the dollar from 1970 to 1980, likely as the result of Central Bank efforts in various countries.

It is interesting to note once again from figure 3 the correspondence of the turnaround in exports and the downturn in the dollar. If this relationship holds true, then the recent strengthening of the dollar could once again foreshadow some weakening of agricultural exports in the near future. Nevertheless, U.S. recovery from the recession of the early 1980s has spread worldwide to some extent, helping to bolster foreign demand. Some of the most indebted developing countries have also found some flexibility in their foreign exchange situations after several years of macroeconomic

Figure 6

CORN EXPORT INDEX

1985=100

Figure 7

COTTON EXPORT INDEX

1985=100

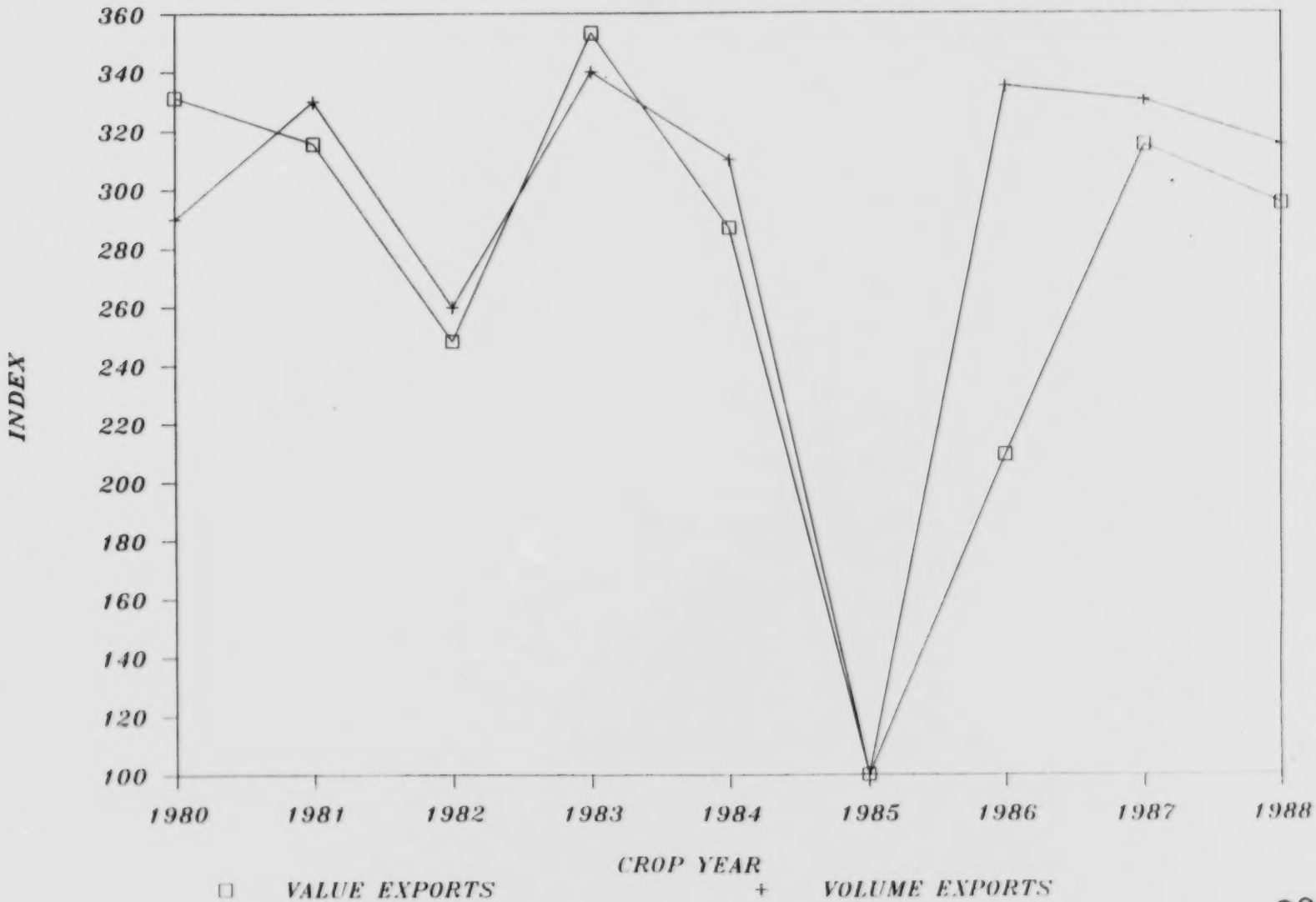


Figure 8

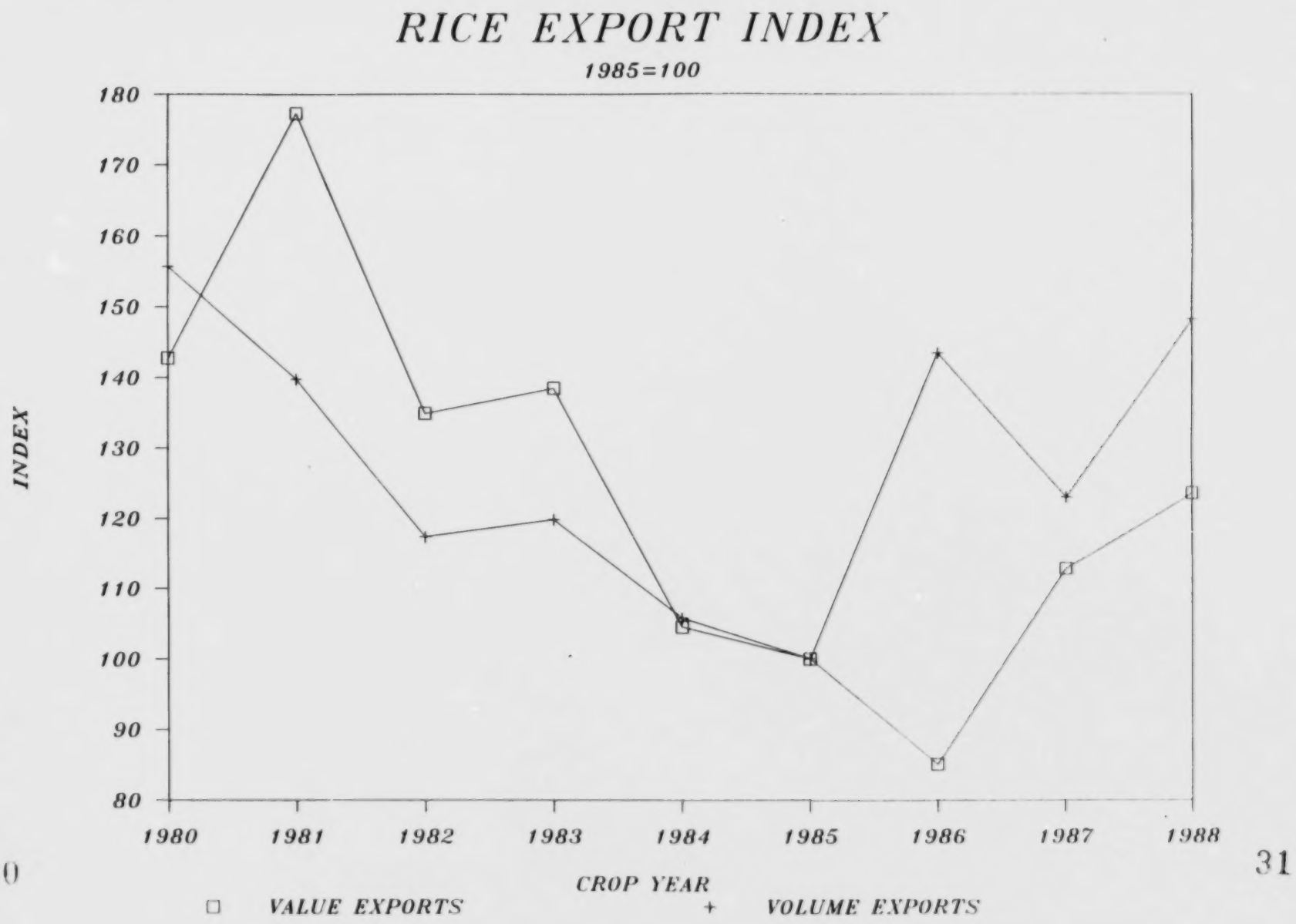

RICE EXPORT INDEX
1985=100
INDEX
180
170
160
150
140
130
120
110
100
90
80
1980
1981
1982
1983
1984
1985
1986
1987
1988
CROP YEAR
VALUE EXPORTS
VOLUME EXPORTS

Figure 9

SOYBEAN EXPORT INDEX

1985=100

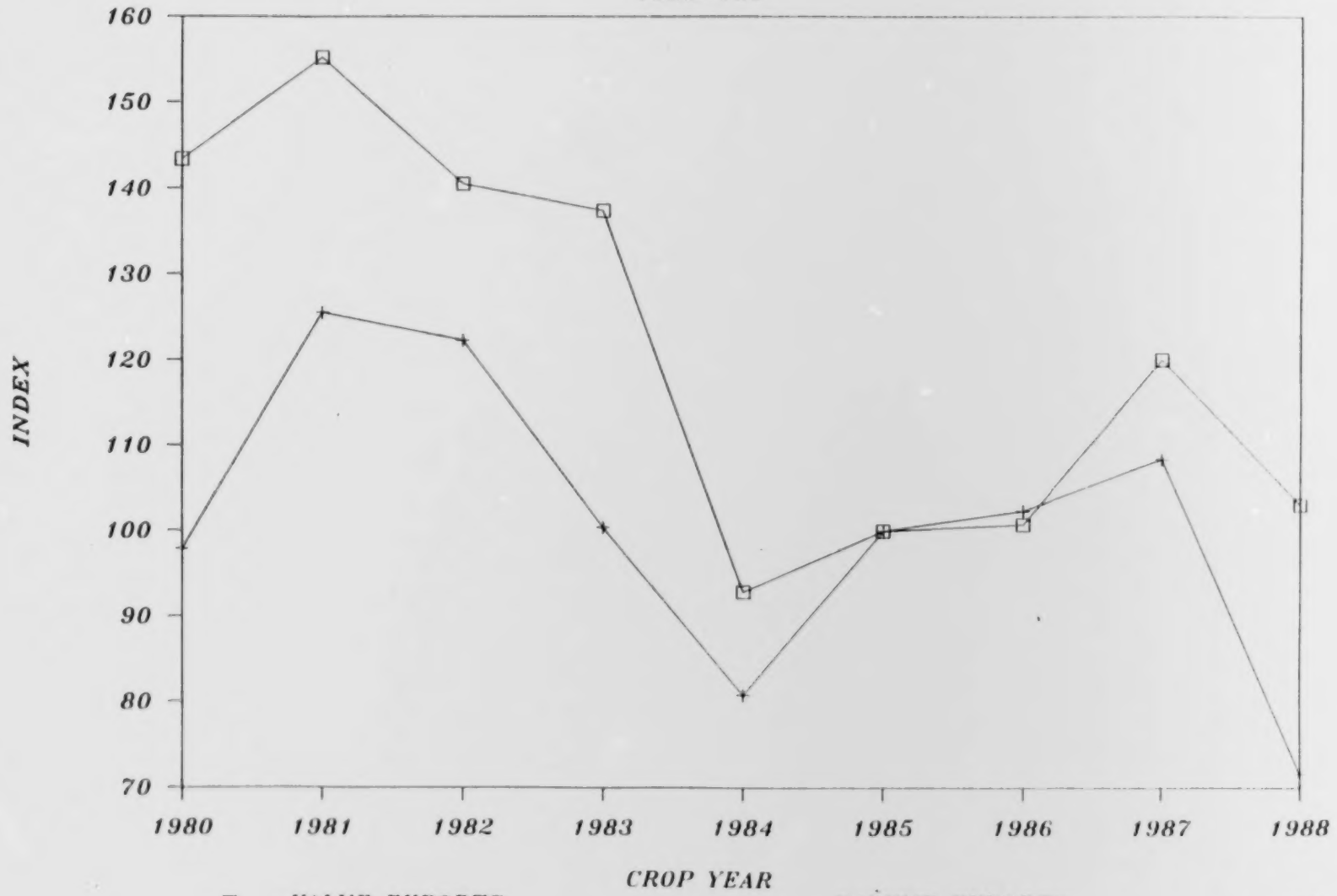


Figure 10

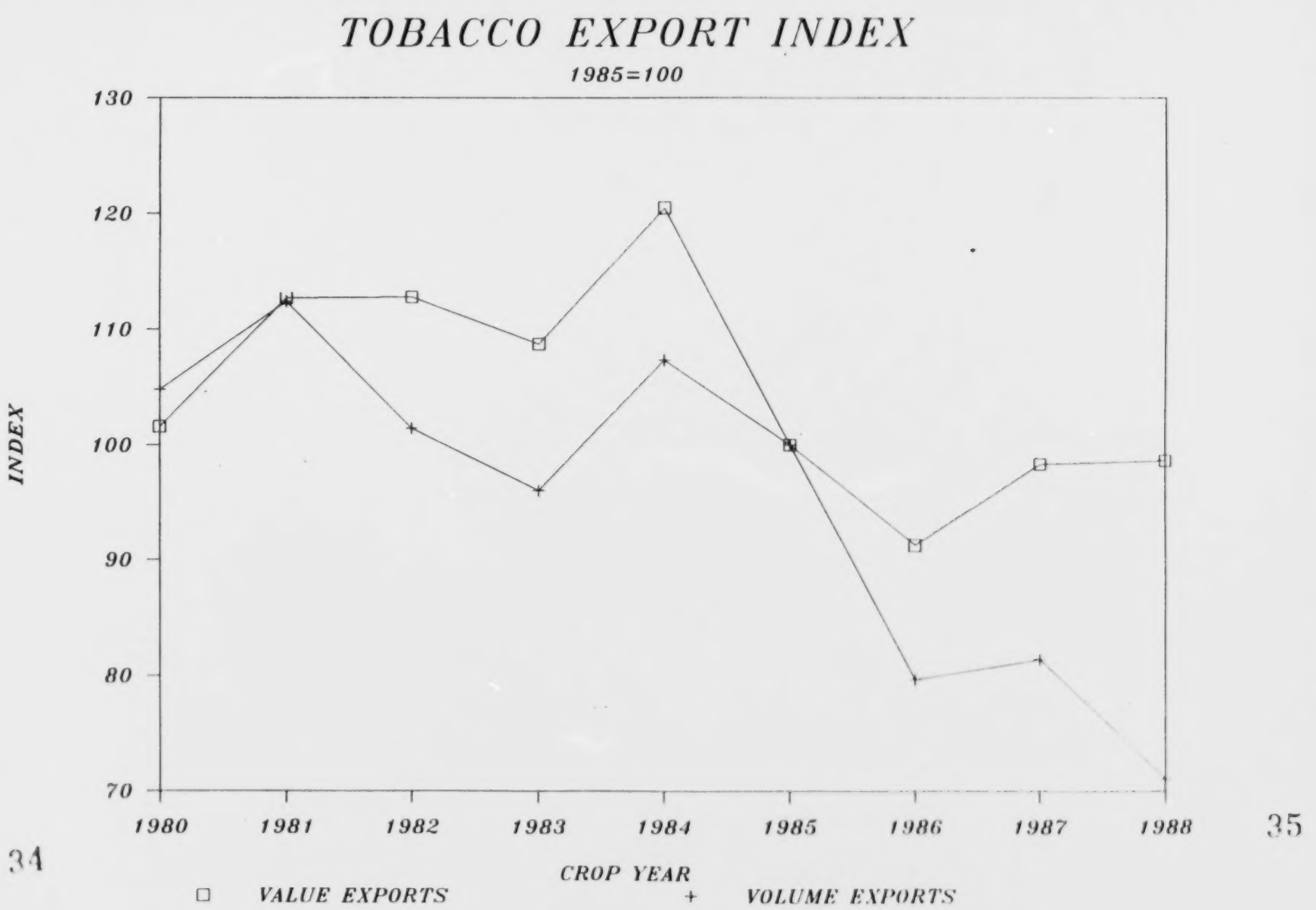
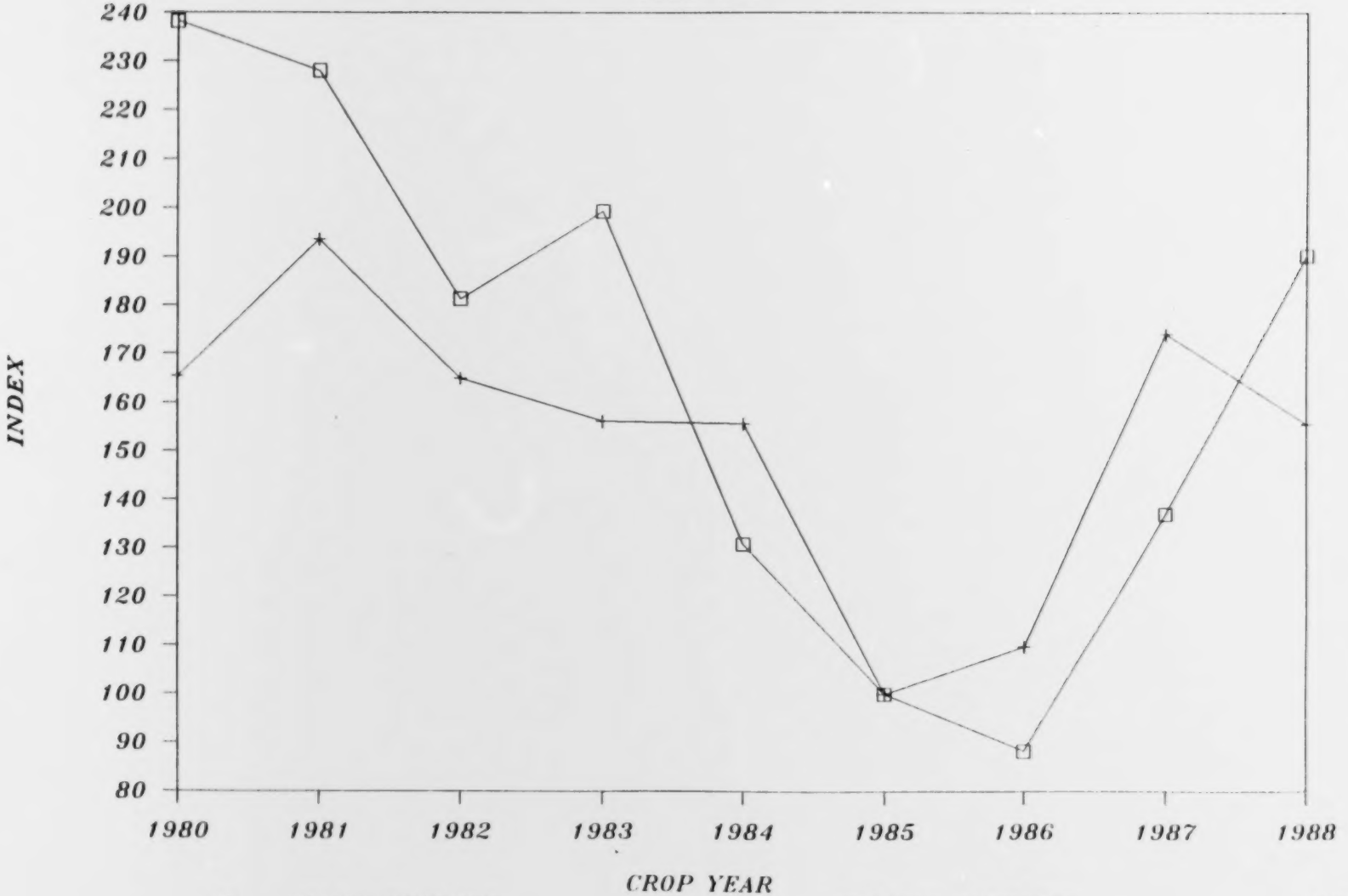

TOBACCO EXPORT INDEX
1985=100
130
120
110
100
90
80
70
INDEX
1980
1981
1982
1983
1984
1985
1986
1987
1988
CROP YEAR
VALUE EXPORTS
VOLUME EXPORTS

Figure 11

WHEAT EXPORT INDEX

1985=100



adjustments and rescheduling debt. The question of how much of the recent reversal in some major export categories is due to the 1985 Farm Bill and how much is due to unrelated macroeconomic and other world market forces will be at the center of the debate on the 1990 Farm Bill.

COMPETITIVENESS IN WORLD AGRICULTURAL MARKETS

Just as some people are real competitors in athletics, academics, business, or other pursuits, some countries are real competitors in world agricultural markets. Those who compete well in sports, for example, have an aura of strength, power, and command about them. Being one who has never really competed well in sports, I have marvelled at the competitive power these people seem to have. I look at myself and wonder, where does their competitive strength and ability come from? Why do some excel in certain sports and others excel in other sports? Why do they seem to have what it takes and I do not? What does it take to continue to be a top competitor?

Similar questions could be asked about those countries that seem to compete so well in world agricultural markets. Where does their competitive power come from? Why are some countries highly competitive in certain commodities while other countries compete well in other commodities? Why do some countries not compete well at all? If we can begin to understand the answers to these questions, then we may be able to begin to understand what the future holds in store, who will be the strong competitors in what commodities and what it takes for the U.S. to be a strong competitor.

The Principle of Comparative Advantages

In the early 1800s, David Ricardo, a noted political economist, put forward the concept of comparative advantage as the basic principle determining world trade patterns. He theorized that countries gain economically when they specialize in the production of those commodities in which they have the greatest relative advantage or least relative disadvantage in terms of resource use and trade them to other countries in return for the commodities in which they have the greatest relative disadvantage or least relative advantage. In other words, a country will gain by producing and exporting the commodity that it is relatively more efficient in producing and then trading it to other countries for those commodities in which it is relatively less efficient in producing.

Note that this principle does <u>not</u> suggest that a country will tend to export a particular

commodity if it is a lower cost producer of that commodity than another country. That is more akin to an earlier notion of absolute advantage. Thus, even a country which is a higher cost producer in all commodities than other countries can gain economically by producing and trading the commodity that it is most efficient in producing, i.e., the commodity in which it has the least disadvantage relative to the other commodities it produces. Consequently, those who attempt to determine comparative advantage by country and commodity through a simple comparison of costs of production have apparently not understood the principle of comparative advantage as the basis of trade.

It is important to understand, however, that comparative advantage is a dynamic concept. It can be gained and lost. The basic resource endowments of land, labor, and capital that determine comparative advantage are not fixed for all time. In particular, comparative advantage can be gained (and maintained) through investment in research and development of cost-reducing technologies. On the other hand, comparative advantage can be quickly lost through inadequate allocation of resources to such research.

In this age of rapidly expanding worldwide technological progress in agriculture, a steady growth of research investment is needed to simply maintain comparative advantage. Infusion of sufficient funds to provide for possible gains in comparative advantage have been difficult to come by in the U.S. agricultural sector in recent years. The biotechnology revolution, if properly funded, has the potential to increase agricultural productivity and significantly reduce our relative costs of production. We are not the only country, however, that understands the potential of biotechnology. The country which pushes this frontier the furthest forward the fastest will reap the rewards of increased international competitiveness.

Competitive Advantage

Not only is comparative advantage dynamic and changeable as the natural result of market forces and technological advances, comparative advantage can be shifted or distorted by government policies that subsidize or reduce costs and increase prices to producers. Policies that reduce world prices of an exporting country's commodities, such as export subsidies, deficiency payments, and marketing loans, can redirect the world trade flow and mask the underlying comparative advantages.

Thus, a country can gain a competitive advantage in production and export of a commodity if, through government policy, the country prices its commodity relatively more cheaply in world markets. The trade result can be the same as a fundamental shift in comparative advantage.

This means that even if adequate data on costs of production were available by country, the pattern of comparative advantage would still be difficult to determine. The distortions in market prices and costs by the myriad of production, consumption, marketing, and trade policies around the world make it extremely difficult to identify and measure those differences in relative cost of production within and among countries that are due to comparative advantage and those resulting from policy interventions.

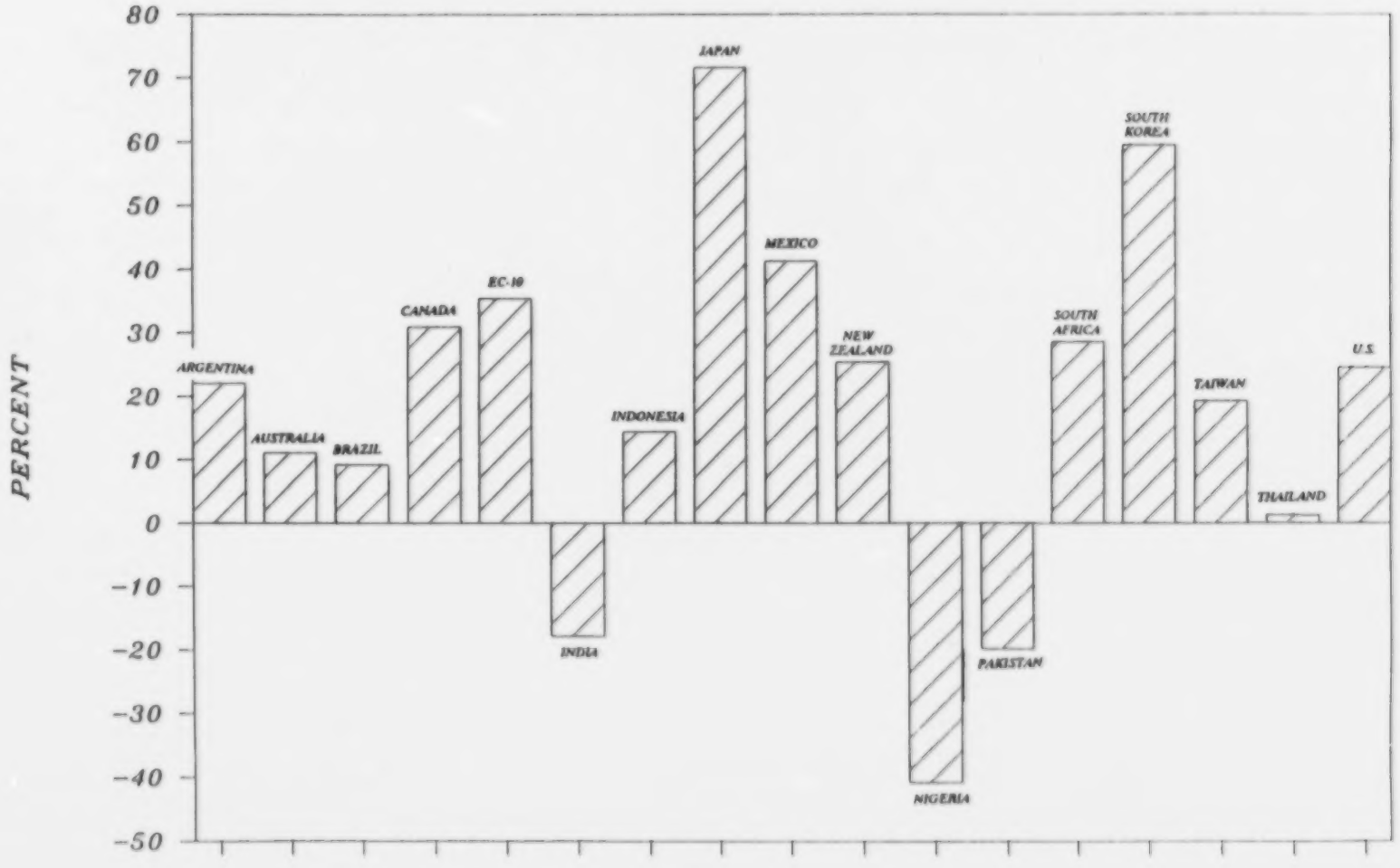
One method of measuring and comparing the extent of policy distortions among countries was developed at the Food and Agriculture Organization (FAO) in the mid-1970s (FAO 1973 and 1975). This method involves the calculation of Consumer and Producer Subsidy Equivalents (CSE and PSE) as the net transfers from the government to the consumers and producers in a given country. The CSE and PSE measures summarize the effects of a wide variety of government policies into single parameters and allow comparisons to be made of government policy distortions across countries, commodity markets, and types of policy.

The Economic Research Service of the U.S. Department of Agriculture has calculated these parameters and report a wide variation in support to producers across countries and commodities (Ender and Wainio). Japan and Korea provide the highest levels of support for producers while producer support provided by the U.S. was more moderate and comparable to those in the EC, Canada, New Zealand, Mexico, and South Africa (figure 12). The calculated PSEs for the poorest developing countries tend to be negative, indicating that agricultural producers in those countries are implicitly taxed.

The PSE calculations reveal a high level of support among individual commodity groups for sugar and dairy, less for grains, and least for meats and oilseeds (figure 13). Exported commodities tend to be supported less than imported commodities. The ERS analysis also indicates that price supports are the most prevalent form of support among developed and developing countries although input subsidies are more common in developing countries.

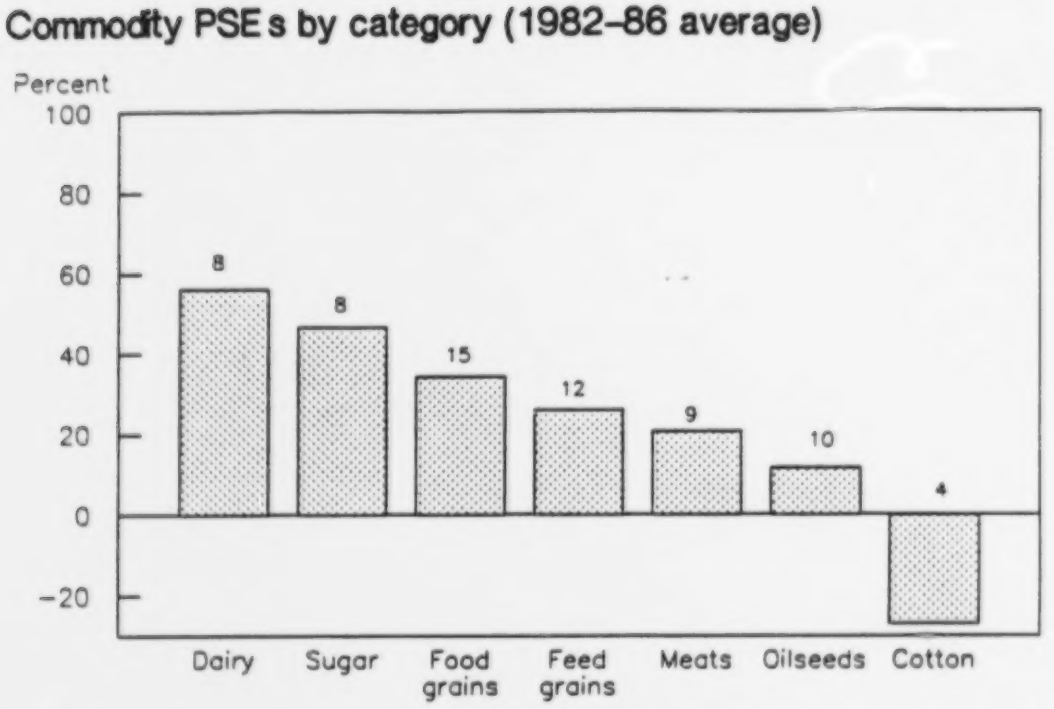
Figure 12

OVERALL PSE BY COUNTRY, 1982–86



Source: Ender and Wanio, USDA.

Figure 13



The numbers above the bar represent the total of different countries contributing to the commodity PSE.

CURRENT ISSUES IN INTERNATIONAL AGRICULTURAL TRADE AND POLICY

A number of issues and developing trends in world agricultural markets have the potential to shift current world patterns of agricultural trade significantly. These shifts will likely impose disruptive adjustments in the agricultural sectors of virtually every country at every market level. Among them, five of the most discussed issues include the following in no particular order: 1) the current round of multilateral trade negotiations just getting underway; 2) the growing trend toward higher value products in world trade; 3) economic integration of the European Community scheduled for completion by the end of 1992; 4) foreign development assistance and the impact on trade; and 5) the U.S.-Canada Free Trade Area Agreement.

Agriculture and the MTN

The U.S. and other signatories of the General Agreement on Tariffs and Trade (GATT) have agreed to participate in another round of trade negotiations, the eighth since World War II. Launched in Punta del Este, Uruguay with the signing of a ministerial declaration in October of 1986, the negotiations (referred to as the Uruguay Round or the GATT negotiations) will feature hard bargaining on reductions in trade barriers among participating countries. Through the several past rounds of negotiations little process has ever been made on liberalizing world agricultural trade. One reason is that, in the past, cuts in agricultural tariffs could only be negotiated if they were offered in exchange for tariff cuts by other countries. Some across-the-board cuts have been achieved for industrial products but never for agriculture. More importantly, however, is that border measures for agricultural goods, primarily for the purpose of validating domestic farm programs, have never been on the table for negotiation.

This round of talks is focusing on several areas for more comprehensive treatment than in past rounds, one of which is agriculture. The U.S. was quick to take the initiative in the talks in July of 1987, calling for removal of all trade-distorting agricultural policies including domestic subsidies and border measures over a ten-year period. Other groups, including the EC and the Cairns Group, rejected the U.S. proposal as unrealistic and submitted their own. Over the last couple of years, officials of the participating countries have met numerous times, both formally and informally.

What started with a flourish of press coverage and great promise of quick agreement came to the brink of impasse in April of this year at the "second midterm review" over the language and substance of the main proposals. The Director-General of GATT, however, mediated a compromise proposal that called for a freeze in farm support at 1989 levels and "substantial, progressive reduction" of trade-distorting subsidies. The freeze includes domestic and export support and protection, as well as border measures, but excludes acreage reduction programs. Protection through these measures is not to exceed 1989 levels. Also, tariff and non-tariff barriers are not to be "intensified". The compromise agreement also calls for a reduction in support and protection levels in 1990, as measured either through aggregate reductions or specific policy measures. The proposed reductions are to be submitted by each participant next month (October 1989).

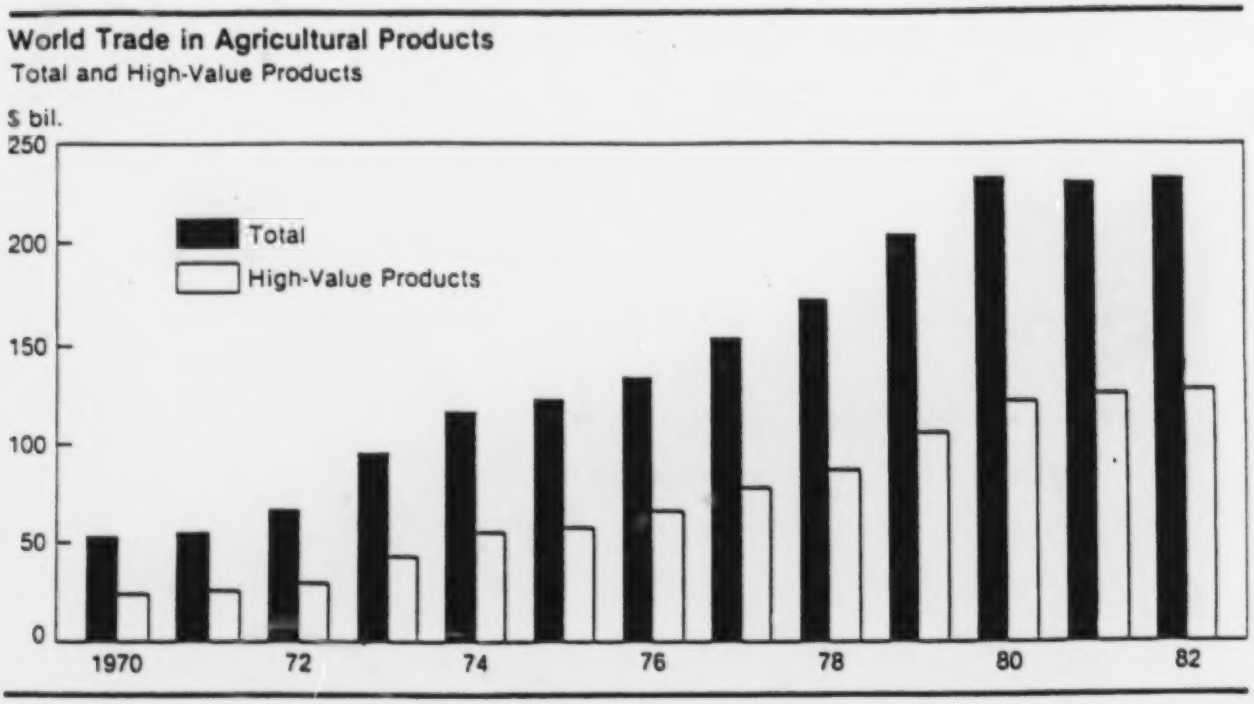
These, however, are only short-term measures. The long-term elements of the compromise agreement require substantial progressive reductions in agricultural support without specifying exactly how that is to be achieved. The long-term commitments are to include all policies that indirectly or directly affect access of imports and export competition, including quantitative restrictions, other non-tariff barriers, tariffs, internal support measures and export assistance.

The long-term measures also include harmonization of sanitary and phyto-sanitary regulations among countries. According to the agreement, measures for protecting human, animal, and plant health should be based on sound scientific evidence and reflect appropriate standards as set by international organizations. This was a major U.S. objective in the negotiations. Detailed proposals (country plans) are to be submitted by December of this year. Agreement on the long-term reform program and the implementation schedule is to occur by the end of 1990.

Higher Value Product Trade Trends

Although world trade in grains, oilseeds, and other bulk, low-value farm commodities (LVPs) grew rapidly in the 1970s, trade in high-value agricultural products (HVPs) grew even faster (figure 14). By 1980, world trade in HVPs passed $120 billion compared with the $110 billion trade in LVPs (USDA). The U.S. was successful in capturing almost two-thirds of the expansion in LVP trade during that period, particularly that of grains and oilseeds (USDA, 1983). The increase in HVP trade, however, was captured primarily by the EC and other developed countries. One study concludes that

Figure 14


World Trade in Agricultural Products
Total and High-Value Products
$ bil.
250
200
150
100
50
0
Total
High-Value Products
1970
72
74
76
78
80
82

despite having a more efficient processing industry, the U.S. struggled to maintain a 10 percent share of the growing world HVP trade (USDA 1983).

By the mid-1980s, the U.S. was exporting about a quarter of the corn, over a third of the tobacco, over two-fifths of the soybeans, about half of the wheat, cotton and rice produced in this country (table 4). In contrast, for example, the U.S. exported 3% of the meat and about 7% of the fruits and vegetables produced in this country (tables 5 and 6). But U.S. exports of higher value commodities have been increasing steadily since the late 1970s. While grains, oilseeds, and cotton account for nearly 95% of U.S. agricultural exports by volume, they account for only 60% of the value (compare figures 4 and 15). HVP exports now account for nearly 40% of the value of U.S. exports compared to only 25% in 1974 (figure 15).

The fastest growing U.S. exports in the HVP category are red meat and fruit (figures 16 and 17). The Beef Market Access Agreement signed last year with Japan has substantially opened the Japanese beef market to U.S. beef exports with greater liberalization yet to come. The result has been dramatic increases in the volume and value of U.S. beef exports. One recent study concluded that exports have added $2-3/cwt to the carcass value of beef cattle in the U.S. already. Our research on Japanese livestock markets suggests that U.S. exports of beef to that country will continue to expand well into the next decade (Wahl, Williams, and Hayes). This is a significant example of the impact that trade liberalization negotiations can have on world markets.

Despite these successes, however, the question remains as to why has the U.S. been relatively more successful in exporting low-value, bulk agricultural commodities like corn and soybeans than higher value and value-added food commodities. Some have suggested that it is a simple question of economics; that is, the U.S. does not have a comparative advantage in the production and processing of higher value commodities. That answer, however, is quite unsatisfactory. If the same question had been posed about soybeans during the 1950s, for example, those same economists might well have given the same answer and concluded that conducting research on the production, processing, and marketing of U.S. soybeans and soybean products would be an inefficient allocation of scarce research resources.

Nevertheless, the expansion of U.S. HVP exports does face a number of barriers. The most troublesome include: 1) protectionistic policies by importing countries and competing export suppliers

Table 4

AVERAGE SHARE OF U.S. PRODUCTION EXPORTED OF SELECTED CROPS, 1930-1988

Decades	Wheat	Cotton	Tobacco	Corn	Soybeans	Rice
			- - - - - PERCENT - - - - -			
1930-1939	8.4	50.9	31.4	1.6	6.7	16.6
1940-1949	18.7	23.1	22.4	2.0	2.8	42.7
1950-1959	35.9	35.7	23.6	4.5	16.3	49.6
1960-1969	53.6	35.0	26.1	12.4	28.1	61.2
1970-1979	58.1	41.2	36.7	24.4	38.3	58.9
1980-1988	58.2	45.2	37.3	24.9	40.0	49.3

Source: USDA. Agricultural Statistics. (Various Issues)

Table 5

AVERAGE SHARE OF U.S. PRODUCTION EXPORTED: MEAT
1950-1988

Decades	Lamb	Beef	Pork	Chicken	Total Meats
1950-59	0.1	0.6	1.2	1.5	0.9
1960-69	0.2	0.4	1.3	2.9	1.1
1970-79	0.5	0.7	2.2	3.5	1.7
1980-88	0.4	1.2	0.9	4.2	3.0

Source: USDA. Agricultural Statistics. (Various Issues)

Table 6

AVERAGE SHARE OF U.S. PRODUCTION EXPORTED:
SELECTED COMMODITIES, 1981-1988

Fiscal Year	Fruits	Vegetables
1981	7.5	8.6
1982	6.8	8.4
1983	8.4	6.8
1984	8.5	6.0
1985	8.5	5.2
1986	8.9	5.7
1987	8.4	6.1
1988	9.3	6.9
TOTAL	8.3	6.7

Source: USDA. Agricultural Statistics. (Various Issues)

Figure 15

VALUE OF U.S. EXPORTS BY CATEGORY

CALENDAR YEARS 1972–88

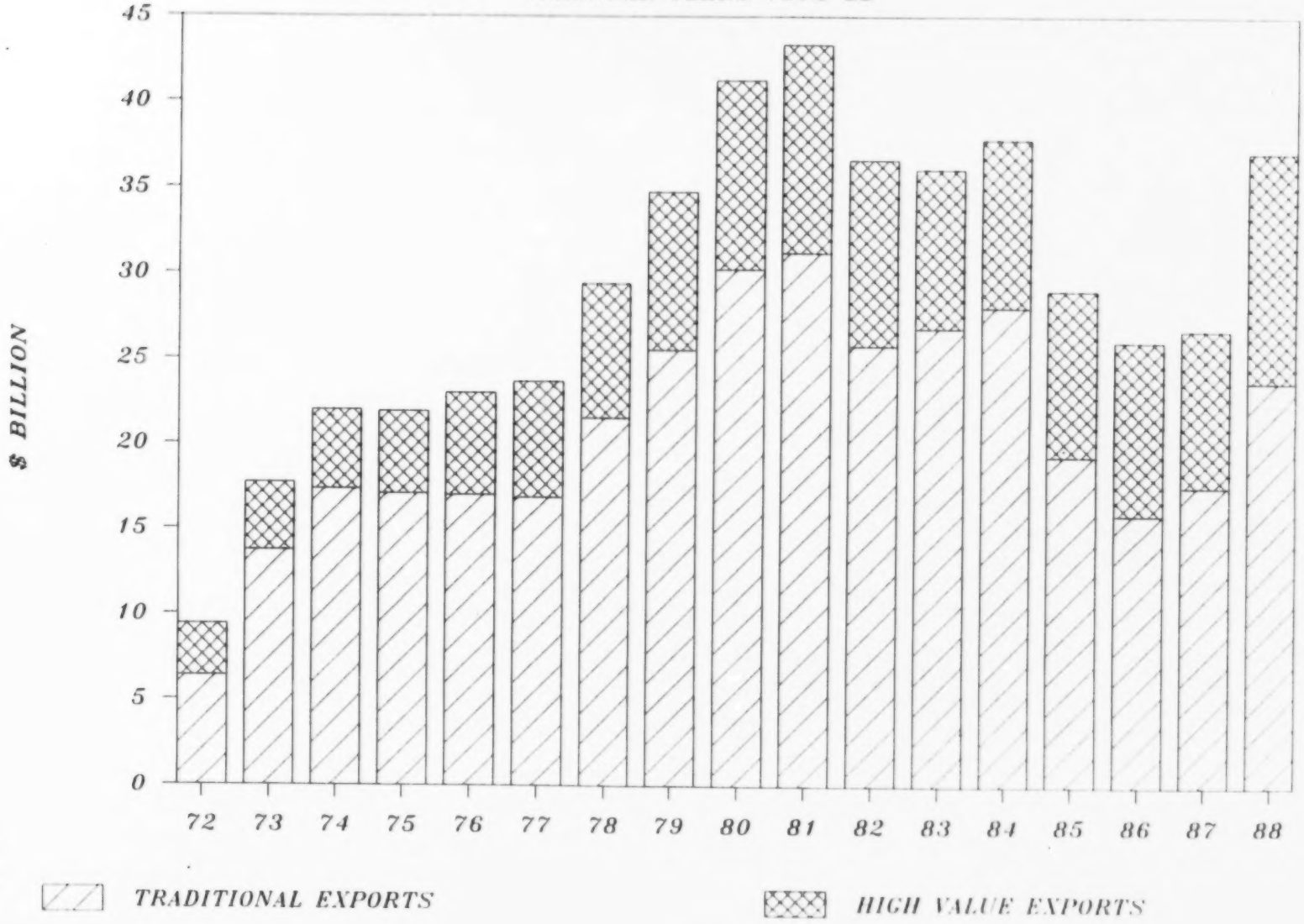


Figure 16

RED MEAT EXPORT INDEX

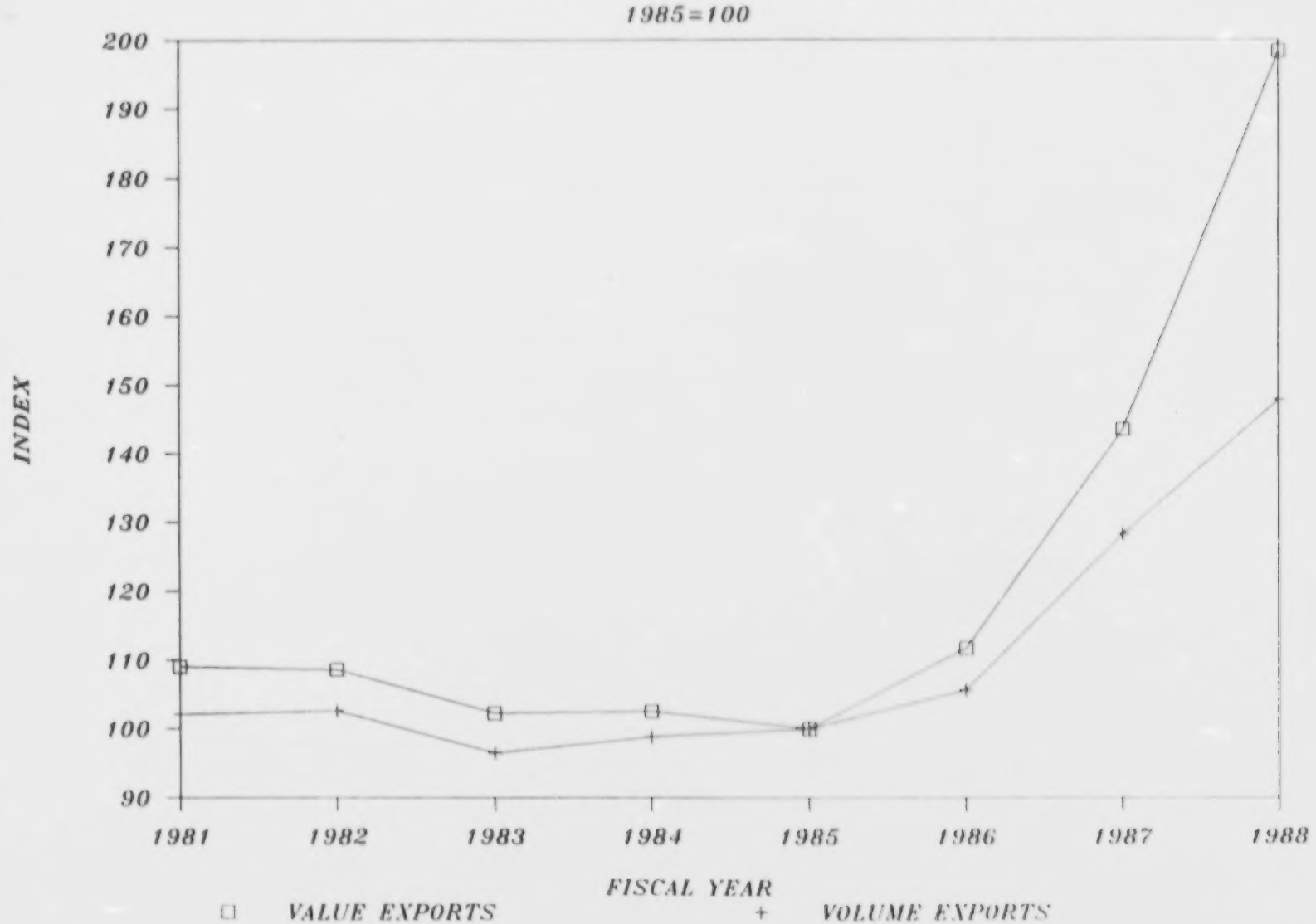
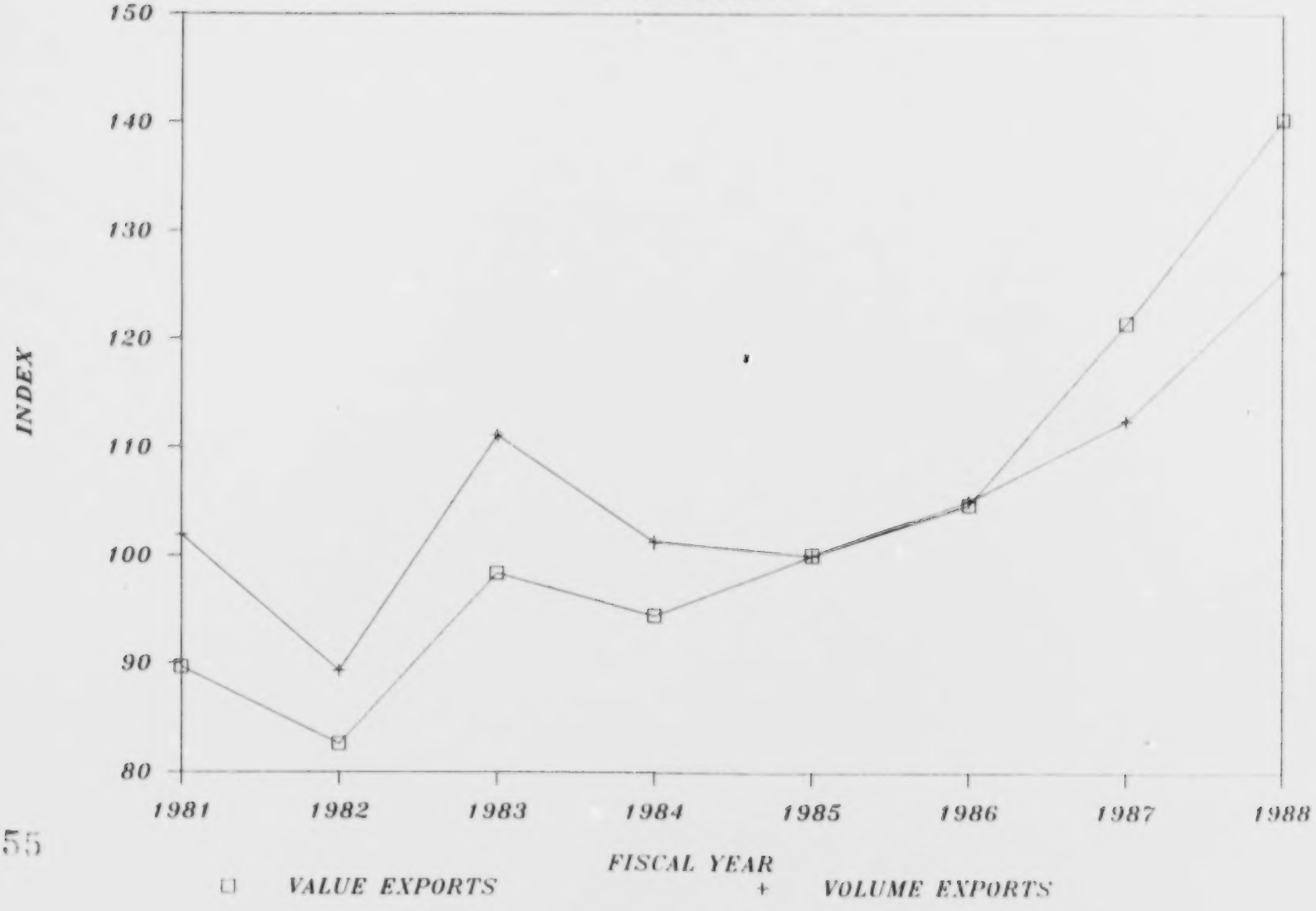


Figure 17

FRUIT EXPORT INDEX

1985=100



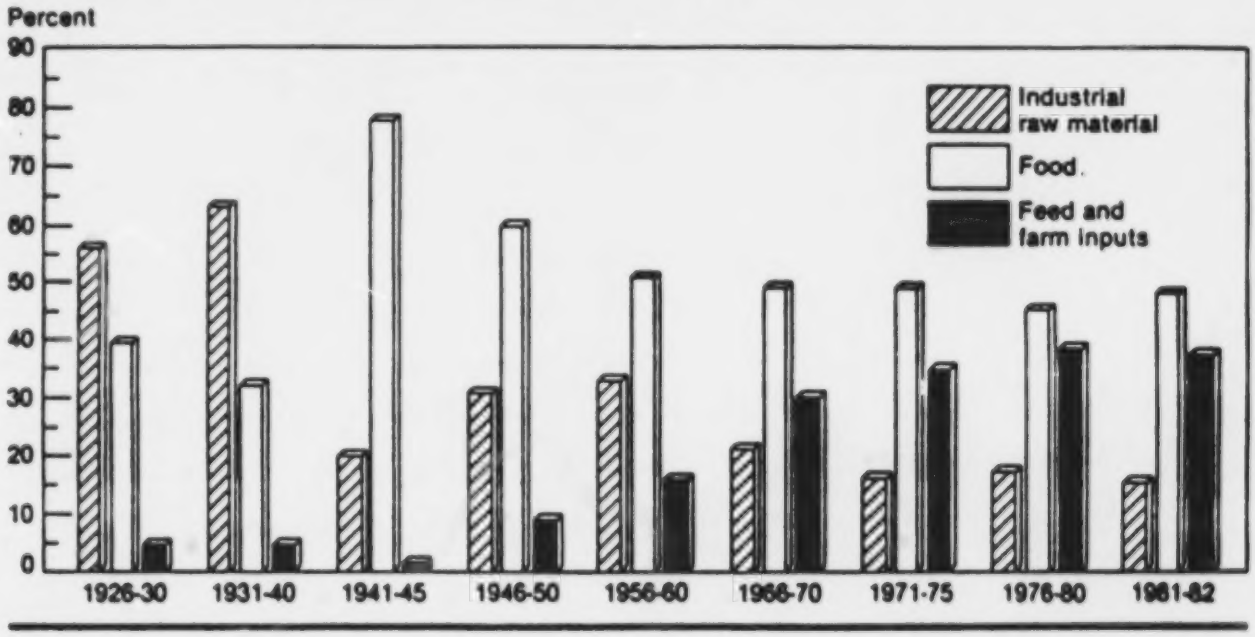
that either restrict total imports or reduce the U.S. share of total imports; 2) legal barriers like health and sanitation laws that act as non-tariff barriers; 3) the relative distance of the U.S. agricultural industry from many of the faster growing international markets such as the Pacific Rim; 4) social factors and cultural differences that affect food consumption patterns in foreign countries; 5) the paucity of international food science research and the processing skills and technology in this country required to develop higher value processed food products with the physical characteristics most desired by foreign consumers that also conform to traditional food preparation and consumption practices in foreign countries 6) an export marketing intelligence quotient (I.Q.) deficiency in this country; and 7) the usual concerns about comparative advantage as well as other economic forces that might impede U.S. meat exports.

If U.S. HVP exports are to achieve any significant increase over the next decade or so, research resources will have to be directed at analyzing the nature and extent of each barrier in each potential market and generating the information, technology, institutions, educational programs, and policy recommendations required to lift or circumvent the barriers that exist. Consequently, those barriers can be considered either as a justification for abandoning hope for greater U.S. involvement in world HVP trade or as opportunities waiting to be discovered through research. Because the problems endemic to U.S. exports of higher value commodities defy disciplinary boundaries, the research agenda must be multidisciplinary in scope. Consequently, the search for meaningful solutions to those problems will require an interdisciplinary effort, a task at which most U.S. research institutions are not particularly experienced.

The trend towards growth and economic development among the world's poor and middle income countries suggests that the current trend toward a larger volume and value of HVP products in world trade will continue into the foreseeable future. The process of economic development brings increases in per capita incomes and a shift in the composition of the food products demanded by consumers from food grains to higher value commodities. In general, the period from the 1940s through the 1960s could be considered to be the age of U.S. foodgrain exports (figure 18). The 1960s through the 1980s then became the age of U.S. feed grain exports. As development proceeded around the world during that period, demand shifted away from food grains toward beef, pork, poultry, dairy products, and other commodities for which feed is a production input. The 1990s and beyond

Figure 18

Composition of U.S. Agricultural Exports 1926-30 - 1981-82



could well become the age of world high value product trade. Whether or not the U.S. becomes a major player in that trend will depend upon the extent to which the barriers faced are removed or circumvented.

European Integration 1992

The 12 member countries of the European Community (EC) have initiated an ambitious effort to fully integrate their diverse national economies by removing all barriers to the movement of goods, services, capital, and people by the end of 1992. If successful, this process would create a single European market greater in size than the U.S. with a gross domestic product of $4 trillion (Kelch). The economies of scale achieved through this process are expected to improve market efficiencies and make the EC much more competitive in world markets. The political and economic dynamics, however, are so complex that full integration by 1992 or the foreseeable future, is not deemed likely by most observers.

EC officials claim that the integration effort is not intended to affect EC agricultural trade. Nevertheless, any efficiencies gained will most certainly have both short and long-run effects on the EC and world patterns of agricultural trade. In the short-run, the food and agribusiness sectors are likely to be the most affected sectors of the EC agricultural industry. Mergers in EC food retail, wholesale, and processing industries have already begun in preparation for a significantly increased market size. As a result, U.S. food exporters and multinational food companies will face increased competition in the EC. The EC 1992 effort will also affect the transportation, finance, input supply, and labor sectors of the EC as integration forces harmonization of standards and extra-EC border policies, coordination of sectoral and cross-sectoral regulations, removal of trade barriers, and other efficiency-enhancing changes.

Short-run gains in efficiency will lead to long-run gains in comparative advantage in agricultural and food production. The removal of the intra-EC barriers will allow freer movement of agricultural resources to lowest cost areas. This will likely have a dramatic effect on the pattern of production, processing, and marketing of agricultural and food products within the EC. As these adjustments occur, changes in the composition and pattern of EC agricultural trade will also take place.

The Dilemma of Development and Development Assistance for U.S. Agriculture

Over the years, the U.S. and other developed countries have funded both multilateral and bilateral efforts to foster development of the agricultural sectors of developing countries. The main motivations have been humanitarian concerns and a belief that there is a net gain of increased exports from foreign development assistance. Concern has been growing in this country, however, that such assistance simply translates into enhanced competition for U.S. agricultural exports as the agricultural sectors of foreign assistance recipient countries strengthen. The dilemma is that future growth of U.S. exports depends on growth in foreign demand but assisting in the process of development in less developed countries (LDCs) as a means of boosting foreign demand may actually mean increased competition for U.S. farmers.

Before looking closer at this dilemma, a few important concepts regarding the relationship between agricultural trade and development need to be considered. First, *economic growth is normally accompanied by a shift in consumer demand toward higher value and quality products.* In general, the income elasticity of demand for higher value food products tends to be higher than for lower value products. Consequently, as development proceeds and per capita incomes rise, there is a relatively larger increase in demand for commodities like meat and meat products, fruits, and processed grain products than for food grains like rice and wheat and traditional food products.

Second, as a corollary to the first point, *world growth and development tends to shift the composition of world trade toward higher value products.* The historical pattern of change in the composition of U.S. exports discussed earlier from food and industrial products in the early 1900s to feed and higher value products more recently is closely related to the pace of development in food importing countries, including Europe, Japan, the Soviet Union, Taiwan, and South Korea.

Third, *future prosperity in U.S. agriculture is closely tied to growth in export demand which is largely dependent on the rate of growth in developing countries.* The strength of the export demand facing the U.S. is determined by a number forces in foreign countries, including: 1) population size and growth; 2) income level and growth; 3) growth of domestic supply; 4) agricultural policies; and 5) foreign exchange availability. A quick survey of countries suggests that without growth in LDCs, the prospects for strong growth in U.S. export demand are limited. In developed countries,

population growth is low; per capita income levels are high but food demand is relatively unresponsive to income changes; domestic food supplies are growing; and import policies are highly restrictive. Middle income countries like Taiwan and South Korea have experienced rapid growth in recent years but those markets are quite limited in size. The centrally planned economies such as the Soviet Bloc and the People's Republic of China have great potential but have been quite erratic in their import behavior. There is no particular obvious trends to suggest that food imports by these countries will grow significantly and become more consistent for the foreseeable future. In developing countries on the other hand, population is growing rapidly; incomes are low but food demand is highly income elastic; domestic food supplies are not growing as rapidly; and imports of higher value products, in particular, are much less restricted. Income growth and improvements in foreign exchange in these countries is likely the best hope for future growth in foreign demand for U.S.-produced agricultural and food products.

Fourth, *overall economic development has rarely been achieved in any country without a strong agricultural sector.* Agriculture generally provides the source of income that facilitates industrialization. Resources are often transferred from agriculture to the industrial sector through some form of explicit or implicit tax on agricultural output. Thus, a growing efficient agricultural sector is a necessary precursor to overall economic development. Food surplus countries, such as the U.S., therefore, have an interest in helping foster agricultural development in developing countries as a means of generating overall development, income growth, and an increase in the demand for food.

As the agricultural sector of a developing country becomes more efficient over time, however, some gains in comparative advantage in the production of commodities that have traditionally been imported may result. This is the dilemma of foreign development for U.S. agriculture. It is not necessarily the case, however, that such foreign development will simply lead to greater competition for U.S. exports. There are a number of reasons for some optimism about the impact of foreign development on U.S. exports.

First, *the U.S. likely has a comparative advantage in feed grains and possibly in various higher value agricultural products.* Thus, as development proceeds abroad, the U.S. may be well positioned to benefit from and even capture a significant portion of newly created demand for higher

value products.

Second, *continued investment in technological progress in this country can moderate the export effects of efforts to improve production and market efficiencies in less developed countries.* Failure to continue on our own path of technological development while investing in the development of LDC agriculture, however, could lead to some shifts in comparative advantage over time. Also, efforts to eliminate developing country policies that distort comparative advantage and reduce U.S. competitiveness in their markets must continue.

Third, *many LDCs have a natural comparative advantage in producing agricultural commodities imported by the U.S.* Assisting those countries to develop along the lines of their natural comparative advantage will reduce the costs of U.S. imports while generating general economic growth in those countries. More importantly, growth in such imports by the U.S. helps generate needed foreign exchange to enable LDCs to purchase increasing volumes of U.S. agricultural exports.

Fourth, *overall economic development brings political stability and less market uncertainty for U.S. producers.* More stability in foreign demand and government farm program costs will result.

Finally, *economic growth in LDCs may require some adjustments in world production and trade patterns.* It would be foolish to think that foreign development assistance and the process of foreign development will not have some impact on U.S. agriculture and the pattern of world trade. The adjustments that are required, however, may well provide greater opportunities for U.S. producers. Forty years ago, soybeans were little more than a cover crop in the U.S. Following World War II, however, the U.S. invested heavily in the reconstruction and development of Europe, Japan, and elsewhere. One consequence was a tremendous increase in per capita incomes in those countries with the inevitable increase in higher value food consumption. Growth in the demand for meat and a rapidly expanding meat production industry created a large growing foreign market for soybeans as a protein feed supplement. U.S. agriculture made the adjustment in response to these development pressures and has benefitted. Who knows what production agriculture in the Midwest and the U.S. would look like today if this development had not occurred? The process of foreign development is not only inevitable but necessary to the future growth of U.S. exports. And although some changes may be required as development proceeds worldwide, U.S. agriculture can benefit from responding.

The U.S. - Canada Free Trade Agreement

Although hotly debated and widely discussed in Canada before it went into effect on January 1, 1989, the U.S. - Canada Free Trade Agreement has received little attention in this country. The agreement is the first step in a effort to remove trade barriers between the U.S. and its largest trade partner. The main issue in Canada, however, has been related primarily to fears of losing cultural identity in a move intended to bring even closer together two countries that are already extensively connected economically. Before the agreement, bilateral trade between the two countries was already large and growing with relatively low tariff and trade barriers (Coyle).

Even though agriculture accounts for less than 5% of the trade between the two countries, the agreement calls for removal of all tariffs on agricultural products over the next 5 to 10 years, bans export subsidies, institutes various trade liberalizing measures with respect to specific commodities such as grains, oilseeds, sugar, and meat, and outlines a trade dispute settlement process. Because agricultural trade and trade restrictions between the two countries are low, however, the agreement is expected to have little impact on the agricultural sectors of either country. Goodloe and Webb estimate only a 2 to 6 percent increase in U.S. - Canada agricultural trade as result of the agreement.

IMPLICATIONS FOR AGRICULTURAL PROGRAMS AND POLICY

Growth in world agricultural markets has thrust Texas and U.S. agriculture firmly back into larger global economy in recent years. With nearly one out of every three dollars in farm receipts coming from foreign consumers, U.S. and foreign agricultural and macro-economic policies, global weather patterns, growth and development in developing countries, foreign currency movements, global advances in technology, and other international forces now exert as much influence on the profitability and future viability of U.S. and Texas agriculture as events in our own markets. Despite likely ebbs and flows, international markets will remain an important source of revenues in the agricultural sector and of potential demand for U.S.-produced agricultural products. This greater role of international markets in the fortunes of U.S. agriculture suggests a number of implications for agricultural programs in research, teaching, and extension and for agricultural policy.

First, virtually all agricultural subsectors and subdisciplines have been, are, and will be increasingly affected by the pervasive influence of international markets on U.S. agriculture. The

internationalization of U.S. agriculture, therefore, requires a similar internationalization of the agricultural research, education, and extension programs in the land grant system in general and the Agricultural Complex of the Texas A&M University System in particular. Increasing demands for support by an increasingly internationally-oriented farm, ranch, and agribusiness community will make such a process inevitable. A pro-active effort in this regard will help keep Texas from lagging behind the competition in the international marketplace.

Second, U.S. agriculture will benefit more over the long run from policies and efforts to take advantage of the trend toward internationalization than from a retreat behind the bulwark of domestic and trade policies to reduce the domestic instabilities and uncertainties that accompany volatile world markets. Several steps in that direction would appropriately include at least the following:

- Increased federal funding of foreign market development programs such as the USDA Cooperator Program and the Targeted Export Assistance Program;
- Increased support for appropriate and coordinated food and technical assistance programs to foster development in developing countries;
- Continued emphasis on international trade barrier reductions to level the playing field in international markets and allow comparative advantage to play an increasing role in the pattern of world trade;
- Increased efforts to stabilize the dollar in world currency markets, including more rational U.S. fiscal and monetary policy and international cooperation, particularly among the U.S., Japan, and West Germany, to correct growing imbalances in foreign trade accounts; and
- Resistance of efforts both to dismantle the main trade-creating provisions of the 1985 Farm Bill and to prop up farm prices through acreage retirement schemes.

Third, a number of major changes and trends in world agricultural markets have the potential to significantly alter the level, pattern, and composition of world trade. Although the expected net effect of these forces are not entirely clear, it is likely that world agricultural trade will continue moving toward liberalization and increased world competition with a gradual shift in the composition of world trade toward higher value commodities. Both U.S. agricultural policy and agricultural programs at land grant universities must respond early and quickly to these trends in order to maintain U.S. competitiveness in world markets and to help ease the inevitable costs of adjustment in the U.S. agricultural sector.

Finally, the competitive edge of U.S. and Texas agriculture has come under considerable pressure as foreign countries have erected protective policies and invested heavily in technology to improve the efficiency and profitability of their agricultural sectors. Maintaining and improving the competitiveness and economic vitality of U.S. and Texas agriculture will require concerted effort to expand the socio-economic and technological knowledge base in this country of global production, processing, and marketing of agricultural products. Biotechnology and other cost-reducing technologies and related education and extension efforts are the basis upon which the U.S. will maintain and enhance its comparative advantage in agricultural production. The scope of agricultural programs, however, must broaden to encompass productivity gains and efficiency beyond the farm gate. Food science efforts to enhance the value of agricultural products and improve the efficiency of the food and fiber processing industry will help shift the composition of U.S. agricultural exports toward higher value commodities. Research, education, and extension efforts in the international marketing of agricultural commodities will help insure a more efficient, competitive flow of new and traditional products to expanding world markets.

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Can Comparative Advantage Be Gained or Lost?

1. Comparative advantage is the result of basic resource endowment (land, labor).

2. Comparative advantage can be gained (and maintained) through research and development of cost-reducing technologies.

3. Comparative advantage can be lost through inadequate allocation of resources to research and development.

Why is What Produced Where and Traded to Whom for What:

David Ricardo's Answer

Comparative Advantage

A country has a comparative advantage in the production of a commodity over another country if it produces the commodity relatively more cheaply.

Law of Comparative Advantage

A country will gain economically if it specializes in the production of that commodity for which it has the greatest relative advantage or least relative disadvantage and then trades with other countries. Total world production of the commodity will consequently increase.

Competitive Advantage

1. Comparative advantage can be distorted by policies that subsidize or increase costs and prices to producers and consumers.

2. Policies that reduce world prices of an exporting country's commodity can shift world demand and capture a greater share of world trade. The opposite occurs with price increases.

3. A country has a competitive advantage in the production and export of a commodity if through government policy the country prices its commodity relatively more cheaply in world markets. The trade result is the same as with comparative advantage.

OUTLINE

1. THE RE-INTERNATIONALIZATION OF U.S. AGRICULTURE

2. COMPETITIVENESS IN WORLD AGRICULTURAL MARKETS

3. CURRENT ISSUES IN INTERNATIONAL AGRICULTURAL TRADE AND POLICY

4. IMPLICATIONS FOR AGRICULTURAL PROGRAMS AND POLICY

THE RE-INTERNATIONALIZATION OF U.S. AGRICULTURE

- PROTECTIONISM AND WORLD TRADE STRANGULATION IN THE 1930S

- THE MOVE FROM FIXED TO FLEXIBLE EXCHANGE RATES

- AN UNPRECEDENTED GROWTH IN WORLD DEMAND

- THE UNEXPECTED DOWNTURN OF THE 1980S

  1. WORLDWIDE RECESSION
  2. GROWTH IN GLOBAL PRODUCTIVE CAPACITY
  3. GROWING DEBT BURDEN OF DEVELOPING COUNTRIES
  4. THE SKYROCKETING DOLLAR

- THE ATTEMPT TO RECAPTURE WORLD MARKETS

- EXPORT PERFORMANCE SINCE THE 1985 FARM BILL

COMPETITIVENESS IN WORLD AGRICULTURAL MARKETS

- WHERE DOES COMPETITIVE STRENGTH COME FROM?

  1. THE PRINCIPLE OF COMPARATIVE ADVANTAGE

  2. COMPETITIVE ADVANTAGE: POLICY DISTORTION OF COMPARATIVE ADVANTAGE

- PRODUCER SUBSIDY EQUIVALENTS

AGRICULTURE AND THE MTN

- LITTLE PROGRESS MADE IN PREVIOUS ROUNDS ON AGRICULTURE

- THE U.S. PROPOSAL AND COUNTERPROPOSALS

- IMPASSE AT THE SECOND MIDTERM REVIEW

- COMPROMISE PROPOSAL

  1. SHORT-TERM MEASURES

     FREEZE ON FARM SUPPORT AT 1989 LEVELS

     REDUCTION IN PRODUCER SUPPORT LEVELS IN 1990

  2. LONG-TERM MEASURES

     "SUBSTANTIAL PROGRESSIVE REDUCTION" IN TRADE-DISTORTING POLICIES

     HARMONIZATION OF SANITARY AND PHYTO-SANITARY REGULATIONS

     HEALTH PROTECTION MEASURES AGREEMENT

- COUNTRY PLANS DUE DECEMBER 1989

- AGREEMENT ON LONG-TERM REFORM PROGRAM AND IMPLEMENTATION SCHEDULE BY END OF 1990

HIGHER VALUE PRODUCTS TRADE TRENDS

- GROWTH IN WORLD HVP TRADE

- U.S. CAPTURED WORLD LVP TRADE

- U.S. HVP EXPORTS LAGGING BEHIND BUT GROWING

- BARRIERS TO FUTURE INCREASES IN U.S. HVP EXPORTS

  1. POLICY BARRIER
  2. LEGAL BARRIER
  3. DISTANCE BARRIER
  4. SOCIAL/CULTURAL BARRIER
  5. FOOD SCIENCE RESEARCH BARRIER
  6. EXPORT MARKETING IQ BARRIER
  7. ECONOMIC BARRIERS

- ECONOMIC DEVELOPMENT AND HVP TRADE

EUROPEAN INTEGRATION 1992

- AN AMBITIOUS EFFORT WITH WIDE-REACHING POTENTIAL EFFECTS

- FOOD AND AGRIBUSINESS SECTORS TO BE MOST AFFECTED IN THE SHORT-RUN

- SHORT-RUN GAINS IN EFFICIENCY WILL LEND TO LONG-RUN GAINS IN COMPARATIVE ADVANTAGE

THE DILEMMA OF DEVELOPMENT AND DEVELOPMENT ASSISTANCE FOR U.S. AGRICULTURE

- THE DILEMMA

  "FUTURE GROWTH OF U.S. EXPORTS DEPENDS ON GROWTH IN FOREIGN DEMAND BUT ASSISTING IN THE PROCESS OF DEVELOPMENT MAY SIMPLY LEAD TO INCREASED COMPETITION FOR U.S. PRODUCERS"

- SOME THOUGHTS ON THE RELATIONSHIP BETWEEN TRADE AND DEVELOPMENT

  1. ECONOMIC GROWTH LEADS TO HIGHER VALUE FOOD DEMAND
  2. WORLD GROWTH LEADS TO INCREASE IN HVP TRADE
  3. PROSPERITY IN U.S. AGRICULTURE TIED TO GROWTH IN U.S. EXPORTS WHICH IS TIED TO GROWTH IN LCDs
  4. OVERALL ECONOMIC DEVELOPMENT RARELY ACHIEVED WITHOUT STRONG AGRICULTURE SECTOR

- REASONS FOR OPTIMISM

  1. U.S. HAS COMPARATIVE ADVANTAGE IN FEED GRAINS
  2. TECHNOLOGICAL ADVANCES CAN MODERATE NEGATIVE EFFECTS
  3. LDC NATURAL ADVANTAGE IN COMMODITIES U.S. IMPORTS
  4. DEVELOPMENT BRINGS ECONOMIC AND POLITICAL STABILITY
  5. LDC GROWTH WILL REQUIRE ADJUSTMENTS

U.S. - CANADA FREE TRADE AGREEMENT

- HOTLY DEBATED IN CANADA BUT RELATIVELY UNKNOWN IN U.S.

- TERMS OF AGREEMENT FOR AGRICULTURAL PRODUCTS
  1. REMOVAL OF ALL TARIFFS OVER 5-10 YEARS
  2. BANS EXPORT SUBSIDIES
  3. COMMODITY SPECIFIC TRADE LIBERALIZING MEASURES
  4. TRADE DISPUTE SETTLEMENT PROCESS

- IMPACT ON U.S. AGRICULTURE EXPECTED TO BE SMALL

IMPLICATIONS FOR AGRICULTURAL PROGRAMS AND POLICY

- INTERNATIONALIZATION OF AGRICULTURAL RESEARCH, EDUCATION, AND EXTENSION PROGRAMS IS INEVITABLE

- GREATER BENEFITS FROM TAKING ADVANTAGE OF INTERNATIONALIZATION THAN FROM PROTECTIVE MEASURES

- EARLY RESPONSE OF AGRICULTURAL POLICY AND PROGRAMS TO MAJOR CHANGES AND TRENDS IN WORLD MARKETS NECESSARY TO MAINTAIN COMPETITIVENESS

- THE SCOPE OF AGRICULTURAL PROGRAMS MUST BROADEN TO ENCOMPASS AGRICULTURAL SECTOR ACTIVITIES BEYOND THE FARM GATE